

The Junior Apprentice: Success of Teaching Programme to Orthopaedic Juniors for Fascia Iliaca Compartment Block for Fractured Neck of Femur Patients

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Objectives

- To determine the uptake of FICB in fractured NOF patients following a teaching programme on FICB delivered to orthopaedic junior doctors.
- To determine if patients receiving FICB had reduced opiate requirements.

Background

Approximately 77 000 hip fractures occur in the UK annually. Pain management for these high risk patients is challenging and the gold standard is operative fixation. A single-shot fascia iliaca compartment block (FICB) has been shown to reduce opioid requirements in fractured neck of femur patients (NOF) pre-operatively and facilitate overall pain management. Despite its efficacy, preoperative FICB uptake is low, primarily due to low levels of trained staff. To address this issue, junior doctors on the orthopaedic team, the first to assess fractured NOFs, were trained to perform FICB. This study assessed the number of fractured NOF patients receiving FICB after the training, as well as the efficacy of the block.

Method

A teaching programme on performing FICB was delivered to all orthopaedic SHOs on starting their rotation in April 2013. The teaching programme consisted of a group presentation followed by 5 supervised and signed off FICBs. These were performed by the junior in theatre and supervised by an anaesthetist.

All parts had to be completed prior to independent practice. The teaching was delivered by an anaesthetic CT1 and the orthopaedic trainees ranged from FY2 to CT2. Data was collected retrospectively on 74 fractured neck of femur patients between May to July 2013. Data collected included whether a block was performed and pre-operative opioid requirement (all opioids were converted to morphine equivalent – fig 1). All blocks were performed using 20-40 mls of 2.5 mg/mL of Levobupivacaine via the landmark technique

(Figure 2).

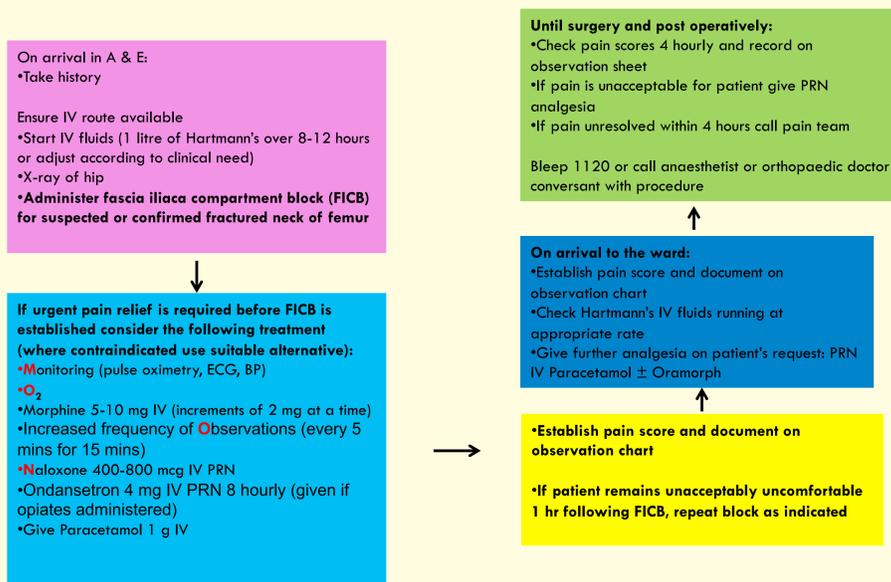
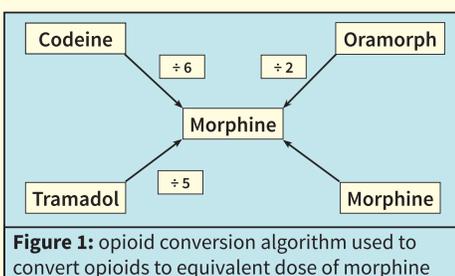


Figure 3: Extract of summary slide from teaching program

Discussion

A pilot study assessing FICB uptake prior to the junior doctor training programme showed uptake at 0%. Following the training programme FICB increased to 45%. This demonstrates that with adequate teaching, junior doctors are willing to undertake FICB in fractured NOF patients. It illustrates that a simple, trainee led teaching programme can overcome the lack of FICB training which was a barrier to uptake amongst orthopaedic junior doctors.

“A simple trainee lead teaching program can increase FICB uptake in fractured NOF patients by 45%.”

Results

74 patients were included in this study [female 48, male 25; Age: 30-100, median 86]. Of the 74 patients, 33 (45%) had FICB pre-operatively performed by the trained junior doctors. Opioid requirement per day in those not receiving a FICB was 6.58 mg compared with 4.9 mg in those receiving FICB ($p=1.01$ -t-test).

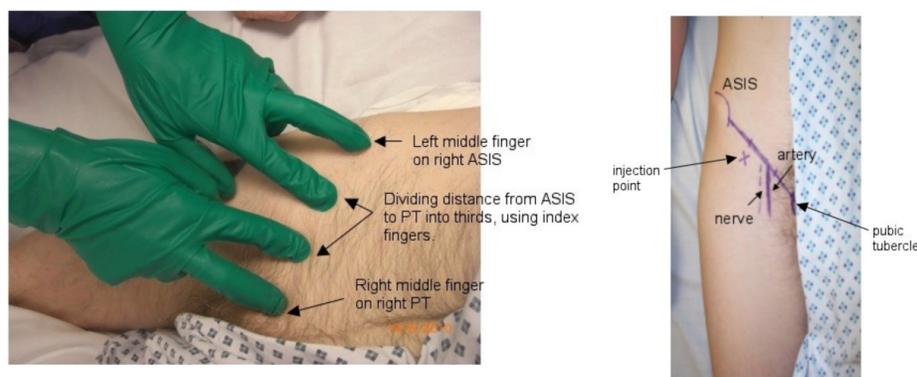


Figure 2: Landmark technique for FICB.
(<http://www.frca.co.uk/Documents/193%20Fascia%20iliaca%20compartment%20block.pdf>)

The study also assessed the efficacy of peripheral nerve blocks performed by the trained juniors by comparing opiate requirements in patient receiving the block compared with those who did not. Although there was trend for a decreased median opiate usage in the FICB group compared to the unblocked group (4.9mg vs 6.58mg) this was not significant ($p=1.01$ - t-test)

The lack of a significant decrease in opiate requirement in the FICB group may be multifactorial. Firstly, the less experienced junior may be delivering less effective blocks. A common mistake is failure to pierce the fascia iliaca and injection of the local anaesthetic into the incorrect compartment. The fascia in the elderly can vary in their thickness and integrity giving a less distinct ‘pop’ when the block needle is progressed. This is more likely to be appreciated by the more experienced technician.

Secondly, opioid requirement is a difficult parameter to assess in this patient group. 25% of our patient group had a formal diagnosis of dementia which may have lead to problems communicating pain relief requirements and pain scores. There can be variability in nurses’ knowledge of pain management in the elderly which impacts on their assessment and willingness to dispense as required opioid medications in this high risk group. This could represent a large under treatment of pain in our non-block group.

Conclusion

A simple trainee led teaching program can increase FICB uptake in fractured NOF patients by 45%. However, an improved hands on consultant led training programme is needed to increase the efficacy of the block performed and increase uptake further.

References

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