The Royal College of Emergency Medicine

Best Practice Guideline

Fascia Iliaca Block
in the Emergency Department

May 2020
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Summary of recommendations

1. Fascia Iliaca Block (FIB of FiCB) should be available in Emergency Departments as part of the pain management strategy for patients with fractured neck of femur.

2. Pain management in patients with fractured neck of femur should be instituted as soon as possible (see RCEM standards and guidance on pain management).

3. Administration of FIB should be undertaken only by clinicians who have completed a competency assessment in this skill. A departmental log of competent personnel should be kept, and up to date.

4. Patients receiving a FIB should be closely monitored during and after (for a minimum of 1 hour) the procedure; for both signs of local anaesthetic toxicity and sedation effects of other analgesia that may have been given.

5. Intralipid® should be easily available for treatment of local anaesthetic toxicity in clinical areas where FIB administered.

6. In departments where FIB is administered, there should be a policy available which includes details of competency assessment, monitoring of patients, and treatment of complications.

7. The use of an invasive procedure checklist, and a ‘Stop before you Block’ process is recommended.
Scope

This guideline is designed primarily for use in Type 1 EDs.

Reason for development

Fractured neck of femur is a common presentation to the Emergency Department, and is subject to national audit process (1), as well as previous RCEM national audits (2). Delivery of timely and effective analgesia to patients with a fractured neck of femur is challenging, as evidenced by these audits. (2)

The use of Fascia Iliaca Block in this condition has increased. Whilst there is some evidence to support the use of FIB, this is not conclusive. An RCEM patient safety alert highlighted some of the risks of FIB use. (3)

Introduction

Fascia Iliaca Block (FIB) is being increasingly used in Emergency Departments (ED) including in the United Kingdom, principally for pain relief in fractured neck of femur patients.

The advantage of FIB over Femoral Nerve Block (FNB) is that there is lower risk of intra-neural and intra-vascular injection (see surface anatomy Appendix 5). There is also a theoretical advantage of Lateral Cutaneous Nerve of the thigh blockade (although less utility in the ED setting). Additionally, but again of less relevance in ED setting, an FNB however, uses a lower volume of local anaesthetic, and allows concurrent use local anaesthetic at other site e.g. other nerve blockade.

Considerations

Safety of FIB
As with any invasive procedure there risks. The principal concerns regarding FIB are common to blocks and local anaesthetic use:

- possibility of trauma to closely associated structures, including femoral canal structures
- local anaesthetic toxicity
- risks of infection and bleeding post-procedure
- failure of technique to provide analgesia
Additionally, the RCEM safety alert (3), highlighted the risks of removal of painful stimulus with the instillation of FIB resulting in patients who have had opiates prior to FIB.

Improving safety of FIB

The above issues are addressed in the FIB guidance in the appendices. Firstly, local anaesthetic toxicity risks are reduced by dose reduction in patient with lower body weight, aspiration every 5mls, close monitoring of patients during and after procedure, and avoidance in those who cannot report early signs of toxicity (i.e. obtunded patients).

Ultrasound guidance for the procedure is possible, however there is currently no evidence that this reduces risks. Identification of injection intraneurally requires an awake patient.

Infection risk is low, but this is an aseptic procedure.

Bleeding risk is reduced by avoiding in patients on Warfarin/DOAC; there is currently debate about the risk of using in patients who are therapeutically anticoagulated.

Wrong site block is a ‘Never Event’ within the UK National Health Service, and risk reduced using a checklist and ‘Stop before you Block’ procedures.

Efficacy of FIB

There is some evidence regarding efficacy of FIB in reducing opiate requirements before and after surgery (4). It is suggested that this has benefits including early mobilisation, and reduction of thrombo-embolism and Lower respiratory Tract Infections. However, despite much anecdotal evidence and opinion, there is little current evidence that this benefit (or avoidance of risk) affects mortality.

There is evidence regarding efficacy of FIB in pain relief (5), and regarding safety and use by a wide range of practitioners (6).

Procedures within ED

Many Quality Improvement Projects (QIPs) submitted for the Fellowship Examination of the Royal College of Emergency Medicine have involved use and introduction of FIB (7).

The learning from these QIPs suggests that uptake of FIB within a department can be improved using dedicated pre-prepared ‘block pack’, or a ‘block trolley’ where all
required equipment and paperwork is housed. Additionally, electronic proformas, including in patient record assist with auditing.

Pain management in fracture neck of femur

Management of pain within the ED is a key element of the patient experience. Within patients with a (possible) fractured neck of femur, the delay to effective pain relief can be due to several factors. The use of QIP tools to investigate the causes of delay to pain relief (such as process mapping) and the barriers to efficacy may help an ED understand the local context; however introduction of FIB per se is not usually a 'magic bullet' to solve this issue. However, FIB can be an effective tool in the armoury of clinicians, and can be part of a wider strategy that looks at pain relief in this condition.

Miscellaneous

The appendices include a competency framework, based on the RCEM e-portfolio, a proforma for completion by practitioner (paper version), a brief instruction guide and a block ‘stop before you block’ brief summary. These have been written by employees of the Oxford University Hospitals NHS Foundation Trust, and this is kindly acknowledged.

Additionally, a FIB policy is available on the RCEM website (8).
Appendix 1 – Example of FIB competency assessment

COMPETENCY ASSESSMENT

Fascia Iliaca Block in adult patients with fractured neck of femur

Author: Karen Chivers, Nurse Consultant trainee, written 2015

Name: .................................................................

Position: .................................................................

Reviewed at ED Clinical Governance …10th June 2015……
Process

The aim of the competency document is to establish that the professional undertaking of the procedure is safe. This assessment form is to be used for qualified nurses at a minimum level of Band 6. Competence will need to be reassessed if more than six months has lapsed between episodes of performing the procedure.

Prerequisites of the assessment

The candidate must:-

- Be competent in intravenous and single drug administration
- Have a good working knowledge of the following policies and guidelines:-
  - NCEPOD (2010) An Age Old Problem: A review of the care received by elderly patients undergoing surgery
  - NMC (2006) Standards for administration of drugs
  - Infection Control Policy
  - Exposure to Blood Bourne Viruses (BBV’s)
  - Procedure on Sharps and Infection Control Standard Precautions
  - Procedure and guidelines for the prescribing, preparation and administration of Injectable medicines
  - AAGBI (2010) Management of Severe Local Anaesthetic Toxicity

Assessors in ED

ED Consultants
ED Registrars
ED ACP on the trainers list

Training process for nurses

- Background reading (file of articles in ED)
- Attended teaching session and observed the process
- Be familiar with the ED protocol and proforma (attached in this document)
- Completed three Fascia iliac blocks under supervision to a competent standard
- Have final assessment signed off by a Duty Consultant
Based on: Royal College of Emergency Medicine portfolio

Direct Observation of Procedural skills – DOPs

Summative Assessment

**Fascia Iliac Block Insertion**

<table>
<thead>
<tr>
<th>Trainee name:</th>
<th></th>
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</table>

<table>
<thead>
<tr>
<th>Assessor:</th>
<th>Assessor GMC No:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Grade of assessor:</th>
<th>Date</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Procedure observed (including indications)</th>
<th></th>
</tr>
</thead>
</table>

**Please TICK to indicate the standard of the trainee’s performance in each area**

- **Not observed**
- **Further core learning needed**
- **Demonstrates good practice**
- **Must address learning points highlighted below**
- **Should address learning points highlighted below**
- **Demonstrates excellent practice**

- Indication for procedure discussed with assessor
- Obtaining informed consent
- Appropriate preparation including monitoring, positioning of patient, analgesia
- Technical skills and aseptic technique
- Correctly identifies landmarks for FIB installation
- Correct needle insertion with 2 ‘clicks’
<table>
<thead>
<tr>
<th>Task Description</th>
<th>Assessor Signature</th>
<th>Trainee Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow injection and aspiration after each 5 mls</td>
<td></td>
<td></td>
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<tr>
<td>Situation awareness and clinical judgement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety, including prevention and management of complications and disposal of sharps</td>
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<td></td>
</tr>
<tr>
<td>Care /investigations immediately post procedure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionalism, communication and consideration for patient, relatives and staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documentation in the notes and on proforma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed task appropriately</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Things done particularly well</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning points</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action points</td>
<td></td>
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</tr>
</tbody>
</table>

Adapted from Royal College of Emergency Medicine portfolio
Final Assessment

................................................................. has satisfactorily completed his /her training in fascia iliaca blocks (theoretical and practical observation) and is competent to perform them unsupervised for analgesia for patients with fractured neck of femur.

Assessors signature ...........................................
Assessors name and position ................................
Date ..............................................................

Declaration of Competence

I have undergone appropriate training in the insertion of a fascia iliaca block. I have read and understood the guideline regarding the insertion technique and subsequent care of the patient. I have undertaken a period of supervised practice. I acknowledge my own person accountability regarding my on-going practice and competency and undertake to complete an on-going practice log. If six months passes between performing this procedure, I take responsibility for practicing under supervision and being reassessed before practicing independently.

Practitioners signature .................................
Practitioners name and Position ........................
Date ..............................................................
# Fascia Iliaca Block on-going practice log

<table>
<thead>
<tr>
<th>Date</th>
<th>Patient Number</th>
<th>Notable event / variation, comments, complications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Appendix 2 – Example of FIB record

ADULT FASCIA ILIACA COMPARTMENT BLOCK (FICB)

Larry.fitton@ouh.nhs.uk v2 June 2011

EMERGENCY DEPARTMENT PROFORMA

Please file completed in the ED notes. This is being AUDITED.

**PATIENT LABEL**

Weight..................KG
Date..........................
Are there any contraindications? If Yes then do not proceed..........................

Operator..........................
Consent Y/N Side R/ L
Was any analgesia used before the block Y/N........if yes, what..........................

**DRUG: PLAIN BUPIVICAINE 0.25%**

Note: Do not exceed maximum dose of 2mg/kg

**GUIDANCE:** 1ml of 0.25% Bupivicaine = 2.5mg

| Weight greater than 50kg give 40ml of 0.25% Bupivicaine (contains 100mg) |
| Weight less than 50kg give 30ml of 0.25% Bupivicaine (contains 75mg) |

Total Dose Given (mls) ...........................................  FICB Time............... 

**PAIN SCORE** (Before Block).................................................
**PAIN SCORE** at 30 min (Rest).................................................
Complication...................................................

**INTRALIPID:** *(Kept in Theatre Pharmacy Cupboard)*

**AAGBI guidance must be followed (see separate sheet)**

**BOLUS DOSE IMMEDIATELY** over one minute= 1.5x weight (kg) =..............
**INFUSION DOSE** over 60 minutes= 15 x weight (kg) = .................................
# AAGBI Safety Guideline

## Management of Severe Local Anaesthetic Toxicity

<table>
<thead>
<tr>
<th>1</th>
<th>Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Signs of severe toxicity:</strong></td>
</tr>
<tr>
<td></td>
<td>• Sudden alteration in mental status, severe agitation or loss of consciousness, with or without tonic-clonic convulsions</td>
</tr>
<tr>
<td></td>
<td>• Cardiopulmonary resuscitation (CPR) using standard protocols</td>
</tr>
<tr>
<td></td>
<td>• Manage arrhythmias using the same protocols, recognising that arrhythmias may be very refractory to treatment</td>
</tr>
<tr>
<td></td>
<td>• Consider the use of cardiopulmonary bypass if available</td>
</tr>
<tr>
<td></td>
<td><strong>STOP Injecting the LA</strong></td>
</tr>
<tr>
<td></td>
<td>• Call for help</td>
</tr>
<tr>
<td></td>
<td>• Maintain the airway and, if necessary, secure it with a tracheal tube</td>
</tr>
<tr>
<td></td>
<td>• Give 100% oxygen and ensure adequate lung ventilation (hyperventilation may help by increasing plasma pH in the presence of metabolic acidosis)</td>
</tr>
<tr>
<td>2</td>
<td>Immediate management</td>
</tr>
<tr>
<td></td>
<td>• Confirm or establish intravenous access</td>
</tr>
<tr>
<td></td>
<td>• Control seizures: give a benzodiazepine, thiopental or propofol in small incremental doses</td>
</tr>
<tr>
<td></td>
<td>• Assess cardiovascular status throughout</td>
</tr>
<tr>
<td></td>
<td>• Consider drawing blood for analyses, but do not delay definitive treatment to do this</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>IN CIRCULATORY ARREST</strong></td>
</tr>
<tr>
<td></td>
<td>• Start cardiopulmonary resuscitation (CPR) using standard protocols</td>
</tr>
<tr>
<td></td>
<td>• Manage arrhythmias using the same protocols, recognising that arrhythmias may be very refractory to treatment</td>
</tr>
<tr>
<td></td>
<td>• Consider the use of cardiopulmonary bypass if available</td>
</tr>
<tr>
<td></td>
<td><strong>GIVE INTRAVENOUS LIPID EMULSION</strong> (following the regimen overleaf)</td>
</tr>
<tr>
<td></td>
<td>• Continue CPR throughout treatment with lipid emulsion</td>
</tr>
<tr>
<td></td>
<td>• Recovery from LA-induced cardiac arrest may take &gt;1 h</td>
</tr>
<tr>
<td></td>
<td>• Propofol is not a suitable substitute for lipid emulsion</td>
</tr>
<tr>
<td></td>
<td>• Lidocaine should not be used as an anti-arrhythmic therapy</td>
</tr>
<tr>
<td></td>
<td><strong>WITHOUT CIRCULATORY ARREST</strong></td>
</tr>
<tr>
<td></td>
<td>Use conventional therapies to treat:</td>
</tr>
<tr>
<td></td>
<td>• hypotension,</td>
</tr>
<tr>
<td></td>
<td>• bradycardia,</td>
</tr>
<tr>
<td></td>
<td>• tachyarrhythmia</td>
</tr>
<tr>
<td></td>
<td><strong>CONSIDER INTRAVENOUS LIPID EMULSION</strong> (following the regimen overleaf)</td>
</tr>
<tr>
<td></td>
<td>• Propofol is not a suitable substitute for lipid emulsion</td>
</tr>
<tr>
<td></td>
<td>• Lidocaine should not be used as an anti-arrhythmic therapy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Arrange safe transfer to a clinical area with appropriate equipment and suitable staff until sustained recovery is achieved</td>
</tr>
<tr>
<td></td>
<td>• Exclude pancreatitis by regular clinical review, including daily amylase or lipase assays for two days</td>
</tr>
<tr>
<td></td>
<td>• Report cases as follows:</td>
</tr>
<tr>
<td></td>
<td>• In the United Kingdom to the National Patient Safety Agency (via <a href="http://www.npsa.nhs.uk">www.npsa.nhs.uk</a>)</td>
</tr>
<tr>
<td></td>
<td>• In the Republic of Ireland to the Irish Medicines Board (via <a href="http://www.imb.ie">www.imb.ie</a>)</td>
</tr>
<tr>
<td></td>
<td>If lipid has been given, please also report its use to the international registry at <a href="http://www.lipidregistry.org">www.lipidregistry.org</a>. Details may also be posted at <a href="http://www.lipidrescue.org">www.lipidrescue.org</a></td>
</tr>
</tbody>
</table>

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*Your nearest bag of Lipid Emulsion is kept.*

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This guideline is not a standard of medical care. The ultimate judgement with regard to a particular clinical procedure or treatment plan must be made by the clinician in the light of the clinical data presented and the diagnostic and treatment options available.

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Appendix 3 – Example of proforma (text only)

Emergency Department Protocol
Use of Fascia Iliaca Compartment Block (FICB) in Adult Hip Fracture

Only to be performed by clinicians who have been signed off as competent

Ensure no contraindications to FICB:
• Patient refuses procedure
• Allergy or intolerance to local
• Coagulopathy (anticoagulants, INR>1.5, platelets<100)
• Infection at injection site
• Patient unable to report possible analgesia complications/side-effects due to e.g. confusion/dementia/learning difficulties.
• Inability to identify landmarks
• Previous femoral vascular surgery

Preparation for FICB
• Obtain consent
• Position patient; supine
• This is a sterile procedure
• Prepare equipment, and drugs (0.5ml/kg (ideal bodyweight) of 0.25% Bupivacaine drawn up in anaesthetic 20ml syringes) - 1ml of 0.25% Bupivacaine contains 2.5mg
• Ensure you do not exceed the maximum safe dose of 2mg per kg
• Complete proforma
• If no pain relief after 30 minutes offer alternate analgesia
• Do not repeat block

Technique for FICB
• Ensure patient has iv access, and that resuscitation equipment is nearby.
• Ensure that patient is monitored (3L ECG, NIBP, SpO₂, RR, GCS)
• Find line joining anterior superior iliac spine and pubic tubercle (line of inguinal ligament).
• Find and mark junction where lateral 1/3 and medial 2/3 meet and move inferiorly 1cm from this point. This is to be the point of injection.
• Palpate to ensure you are not close to the femoral artery. If you are, recheck landmarks and if still over the artery abandon procedure.
• Chlorhexidine/Betadine skin prep, sterile gloves, drape the area.
• Raise a small bleb of Lignocaine at the intended skin puncture site.
• Pierce the skin with a large gauge needle.
• Change to a blunt ended needle (BD Integra™ - Blunt Fill Needle 18G) connected via a short extension tube to your syringe of local anaesthetic (LA).
• Advance the needle (aspirating intermittently) perpendicular to the skin, and feel for two “pops” indicating you have crossed the fascia lata followed by the fascia iliaca.
• Aspirate again and slowly inject the LA whilst asking the patient how they feel throughout, being vigilant for signs of LA toxicity or accidental injection into a nerve (severe pain/paraesthesia). Stop injecting if adverse effects occur.
• After injection, withdraw needle and apply 30secs of pressure distal to the injection site to direct the local anaesthetic proximally. Dress the injection.

EMERGENCY INTRALIPID IS STORED IN: __________________________
Appendix 4 – Stop before you block/invasive procedure checklist

STOP BEFORE YOU BLOCK

Patient likely to benefit from nerve block, consented and discussed at the WHO pre-list briefing.

STEP 1 – WHO SIGN IN

STEP 2 – SBYB SIGN IN
- Ask extra personnel to leave anaesthetic room
- Confirm block site with patient (if able), anaesthetic practitioner, consent form & surgical marking
- Apply stop sticker at/near intended needle insertion point

STEP 3 – (GA undertaken if indicated) Preparation for block

STEP 4 – STOP
- IMMEDIATELY before inserting needle
- Reconfirm block site verbally

STEP 5 – PERFORM BLOCK
<table>
<thead>
<tr>
<th>Step</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site of surgery confirmed with consent</td>
<td></td>
</tr>
<tr>
<td>Block site confirmed verbally</td>
<td></td>
</tr>
<tr>
<td>Surgical site mark confirmed</td>
<td></td>
</tr>
<tr>
<td>Correct side identified and prepared for block</td>
<td></td>
</tr>
<tr>
<td>Stop before you block completed</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 4 – RCEM safety flash

The Royal College of Emergency Medicine

February 2018 (revised)

The Importance of Monitoring After Fascia Iliaca Block (FIB)

The Coroner has issued a Regulation 28
FIB removed painful stimulus; pre-administered opiates caused apnoea, this went unrecognised.

NRLS data reveals:
- Poor or no documentation of procedure in ED
- Poor or no post procedure observations in ED

An ED LocSSIP/guideline should include documentation of:
- Site, side, dose and time of block
- Frequency of post procedure observations
  A minimum would be at 5, 10, 15, 30 mins post procedure

RCEM/FIBguideline

For other RCEM issued Safety Alerts and Safety Newslashes see:
www.rcem.ac.uk/safetyalerts
Appendix 5 – Surface anatomy

References

1. HQIP. The National Clinical Audit Programme. Details at: https://www.hqip.org.uk/a-z-of-nca/#.XolO06hKg2w Accessed 30.02.2020
7. Personal communication with Examinations Lead for QIP
8. Available at: https://www.rcem.ac.uk/docs/QI%20+Clinical%20Audit/FIB%20guideline%20document%20for%20the%20ED.pdf Accessed on 30/02/2020
About this document

Authors/Acknowledgements
Larry Fitton, Simon Smith
No conflicts of interest declared

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Authors acknowledge the Best Practice Subcommittee members for comments, Karen Chivers and the OUH NHSFT for the re-printed work.
James France for editing.

Review
Usually within three years or sooner if important information becomes available.

Disclaimers
The College recognises that patients, their situations, Emergency Departments and staff all vary. This guideline cannot cover all possible scenarios. The ultimate responsibility for the interpretation and application of this guideline, the use of current information and a patient’s overall care and wellbeing resides with the treating clinician.

This document contains reference to drugs and their doses; whilst we have tried to ensure accuracy the ultimate responsibility for treatment decisions (including doses) remains with the prescriber.

Research Recommendations
Safety of FIB in patients on anti-coagulants.
Safety of FIB in patients who are obtunded.
Effect of pre-operative/ED administered FIB on post-operative complications.

Audit standards
None specified

Key words for search
Emergency Department, Fascia Iliaca Block, FICB, FIB