



GUIDELINE

Femoral Nerve Block

Scope (Staff):	All Emergency Department Clinicians
Scope (Area):	Emergency Department

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Femoral Nerve Block

Pre-Procedure

A femoral nerve block is a quick, easy, effective and safe method of providing analgesia to the child with a femoral shaft fracture, since the femoral nerve (L2-L4) innervates the shaft and periosteum of the femur.

General

Anatomy:

- The inguinal ligament extends from the pubic tubercle to the anterior superior iliac spine
- At its mid point, the femoral vein, artery and nerve pass beneath it
- The femoral vein lies medial, the artery in the middle and the nerve lateral
- A useful acronym is: **NAVY** = **N**erve, **A**rtery, **V**ein, **Y** fronts (!)



Anatomy: Left Hand Side

Principle:

- The femoral nerve lies in its own tissue plane, is quite superficial (usually 1-2 cm deep; never more than 3cm deep, even in older children) and is separated from the femoral vessels by the fascia iliaca
- Exact identification of the nerve position isn't necessary
- Local anaesthetic injected into the correct plane (just deep to the fascia iliaca) will result in effective nerve block by diffusion of anaesthetic, without the vascular compartment being affected



Anatomy: Left Hand Side

Note: ultrasound guided femoral nerve blocks can be done if you are appropriately trained.

Preparation

Equipment

- Sterile gloves
- Dressing pack
- Skin cleaning antiseptic solution
- Needle: 23 gauge (blue) short bevel needle or 25 gauge (orange) in an infant
- Ropivacaine 0.75% or Bupivacaine 0.5% – appropriate dose drawn up in a syringe

Procedure

Medications

- For either drug, the lowest dose which provides sufficient analgesia should be used
- Both drugs come in a range of concentrations
- If a different concentration solution is used, the volume administered needs to be adjusted accordingly

	Preferred Drug	Alternative
Local anaesthetic	Ropivacaine 0.75%	Bupivacaine 0.5%
Dose	0 – 12 years: 0.25mL / kg > 12 years: 10 – 20 mL	0.2 – 0.4mL / kg (Max 30mL)
Onset of block	Within 10 minutes	Within 10 minutes
Duration of block	6 hours	4-6 hours
Safety	Ropivacaine has a better safety profile	

Positioning and technique

- Clean the skin with antiseptic solution
- Identify the site of injection again (see above in Anatomy section)
- Keeping one finger on the femoral artery 0.5-1cm below the inguinal ligament, insert the needle perpendicular to the skin, 0.5-1cm lateral to the artery
- The plane in which the nerve lies can be found by feeling a 'pop' or loss of resistance twice, first when the needle passes through the fascia late, and then as it passes through the fascia iliaca
- Note that the nerve is fairly superficial (1-2cm) and most failed blocks are due to injecting too deep
- Aspirate to make sure the needle is not in a blood vessel
- Inject the local anaesthetic slowly, while frequently aspirating briefly to make sure the needle tip has not migrated into a vessel
- Some authors describe injecting in a fan shaped pattern around the nerve, however this is not necessary since local anaesthetic injected anywhere under the fascia iliac will diffuse to the nerve and result in a successful nerve block
- Place an IV dot (sticker) over the injection site

Post-Procedure


More

Tags

anaesthesia, analgesia, block, bupivacaine, femoral, femur, fracture, injury, leg, lignocaine, local, nerve, regional, ropivacaine, thigh

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