

Application Exercise

- 1.) Which of the follow patients will you perform a fascia iliaca compartment block under ultrasound guidance?
- 10-year old girl, unable to ambulate due to right hip pain from transient synovitis.
 - 15-year old boy with a right proximal femur fracture after a fall during soccer match.
 - 64-year old lady, on aspirin for ischemic heart disease, with a right neck of femur fracture.
 - 70-year old gentleman with a periprosthetic fracture of his left hip hemi-arthroplasty.
 - 80-year old lady, bed-bound and uncommunicative, with a left inter-trochanteric fracture.
- 2.) A 73-year old Chinese lady comes to the Emergency Department for right intertrochanteric fracture following a fall in the bathroom due to slippery floor. You have performed a fascia iliaca compartment block under ultrasound guidance. The patient reports adequate pain relief over her right hip. However, she also complains of altered sensation over her medial aspect of her lower limb. What is happening?
- Cerebrovascular accident
 - Compartment syndrome
 - Effect of fascia iliaca compartment block
 - Nerve injury due to needling technique
 - Spinal cord compression
- 3.) A 69-year old Indian gentleman comes to the Emergency Department for left neck of femur fracture after he fell off the bed. You have performed a fascia iliaca compartment block under ultrasound guidance. The patient weighs 60kg. A mixture containing 10ml of 1% Lignocaine and 10ml of 0.5% Bupivacaine is used. The patient reports persistent pain 5 minutes following the nerve block. What will you do?
- Add on systemic analgesia (e.g. IV ketorolac or IV tramadol)
 - Call for senior doctor
 - Repeat block with another 5ml of 1% Lignocaine
 - Repeat block with another 5ml of 1% Lignocaine and 5ml of 0.5% Bupivacaine
 - Wait another 5 minutes for the nerve block to take effect

Application Exercise – Suggested Answer

- 1.) Which of the follow patients will you perform a fascia iliaca compartment block under ultrasound guidance?
- 10-year old girl, unable to ambulate due to right hip pain from transient synovitis.
 - 15-year old boy with a right proximal femur fracture after a fall during soccer match.**
 - 64-year old lady, on aspirin for ischemic heart disease, with a right neck of femur fracture.**
 - 70-year old gentleman with a periprosthetic fracture of his left hip hemi-arthroplasty.**
 - 80-year old lady, bed-bound and uncommunicative, with a left inter-trochanteric fracture.

Explanation:

- Not indicated for transient synovitis.
- Works in pediatric patients (less than 16-year old too) so can be performed. However, would need to consider departmental guidelines for its use. Limit to patients 16-year and older now.
- Aspirin use is relative contraindication. Use of ultrasound reduces risk of vascular injury.
- Hip joint is deep therefore less risk of causing infection as nerve block is superficial and under ultrasound guidance.
- Assessment of pain in uncommunicative patient may be difficult. Patient may have contractures, making it difficult to gain access to the site for nerve block. These patients should still receive medications for pain relief, so need to consider other forms of analgesia.

2.) A 73-year old Chinese lady comes to the Emergency Department for right intertrochanteric fracture following a fall in the bathroom due to slippery floor. You have performed a fascia iliaca compartment block under ultrasound guidance. The patient reports adequate pain relief over her right hip. However, she also complains of altered sensation over her medial aspect of her lower limb. What is happening?

- a) Cerebrovascular accident
- b) Compartment syndrome
- c) Effect of fascia iliaca compartment block**
- d) Nerve injury due to needling technique
- e) Spinal cord compression

Explanation:

- a) Cerebrovascular accident is unlikely given the clinical picture – isolated altered sensation over medial aspect of lower limb.
- b) Compartment syndrome is unlikely given the clinical picture – intertrochanteric fracture usually not associated with compartment syndrome, also absence of other Ps (pain out of proportion – earliest, pallor, paralysis, poikilothermia and pulselessness).
- c) The anterior cutaneous branches of femoral nerve and saphenous nerve (branch of femoral nerve) innervates the medial aspect of the lower limb – sensation will be altered when nerve block is performed.
- d) Nerve injury due to needling may cause shooting pain at time of injury, followed by paresthesia. Furthermore, ultrasound use should reduce the likelihood of nerve injury during needling.
- e) Spinal cord compression is unlikely given the clinical picture – isolated altered sensation over medial aspect of lower limb.

3.) A 69-year old Indian gentleman comes to the Emergency Department for left neck of femur fracture after he fell off the bed. You have performed a fascia iliaca compartment block under ultrasound guidance. The patient weighs 60kg. A mixture containing 10ml of 1% Lignocaine and 10ml of 0.5% Bupivacaine is used. The patient reports persistent pain 5 minutes following the nerve block. What will you do?

- a) Add on systemic analgesia (e.g. IV ketorolac or IV tramadol)**
- b) Call for senior doctor**
- c) Repeat block with another 5ml of 1% Lignocaine
- d) Repeat block with another 5ml of 1% Lignocaine and 5ml of 0.5% Bupivacaine**
- e) Wait another 5 minutes for the nerve block to take effect

Explanation:

- a) Add on other forms of analgesia as required.
- b) Always remember to call for help and ask for assistance, especially when in doubt.
- c) and d) Repeating block with additional volume of local anesthesia is appropriate as doses may be inadequate and have not exceeded toxic dose (lignocaine – $100\text{mg}/60\text{kg} = 1.7\text{mg}/\text{kg} < 3\text{mg}/\text{kg}$; bupivacaine – $50\text{mg}/60\text{kg} = 0.8\text{mg}/\text{kg} < 2\text{mg}/\text{kg}$). Should add bupivacaine as lignocaine lasts only 1 to 2 hours.
- e) Lignocaine should have taken effect by 5 minutes, so it will be inappropriate to wait longer.