

ULTRASOUND GUIDED OBTURATOR NERVE BLOCK

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Minimal role but **potentially of use in:**

- i) Transurethral Resection of Bladder Tumour (TURBT) in reducing risk of Obturator jerk response if a Sub-Arachnoid Block (SAB) is given
- ii) Supplementary analgesia for Total Knee Arthroplasty
- iii) Above Knee Amputation
- iv) Supplementary analgesia for hip procedures

TECHNIQUE :

TRANSDUCER PLACEMENT is at the level of femoral artery bifurcation to the profunda femoris. (**MICKEY MOUSE PATTERN**) IMPORTANT POINT #1

Transducer is then **BROUGHT MEDIALY** along the inguinal crease until the **THREE ADDUCTOR MUSCLES (*Adductor longus, Adductor brevis, Adductor magnus*) ARE SEEN** bordering the pectineus (*Pectineus* lies lateral to these three adductor muscles). Once this image is seen, **TILT TRANSDUCER CEPHALAD** looking towards the pelvis.

.... IMPORTANT POINT #2



Figure 1 showing maneuver and positioning of transducer to identify site for performance of obturator nerve block (see text above)

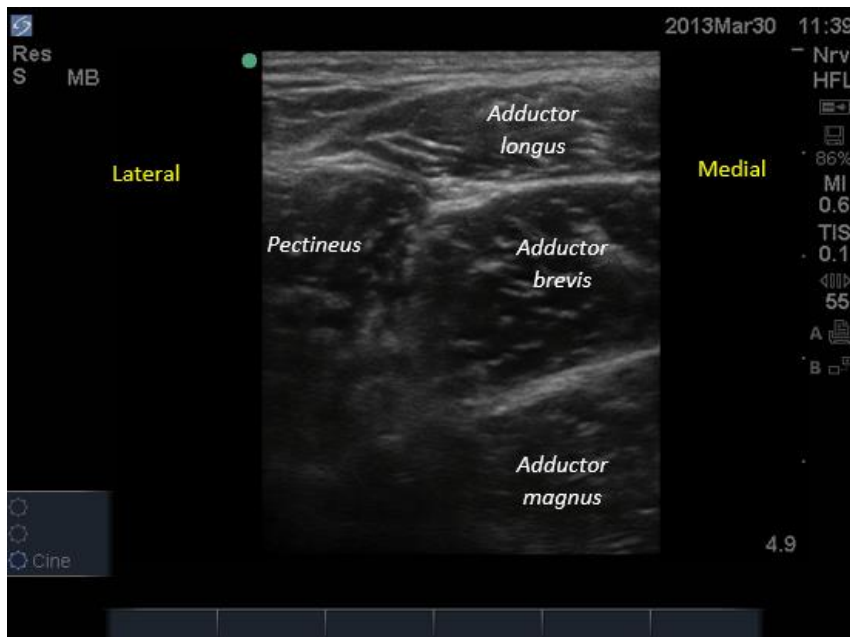


Figure 2: Sono-anatomy of the obturator nerve and surrounding muscles at the antero-medial aspect of the thigh just distal to the inguinal crease.

The **ANTERIOR OBTURATOR** branch lies **WITHIN THE FASCIA AT THE JUNCTION** of these three muscles. (Pectineus laterally, adductor longus and brevis medially - *Figure 3*)

The **POSTERIOR OBTURATOR** branch lies within the fascia **between adductor brevis and magnus**. (*Figure 4*) **.... IMPORTANT POINT #3**

This posterior branch **often (but not always)** courses through **the ADDUCTOR CANAL** and supplies the postero-medial capsule of the knee and the cruciate ligaments.

.... IMPORTANT POINT #4

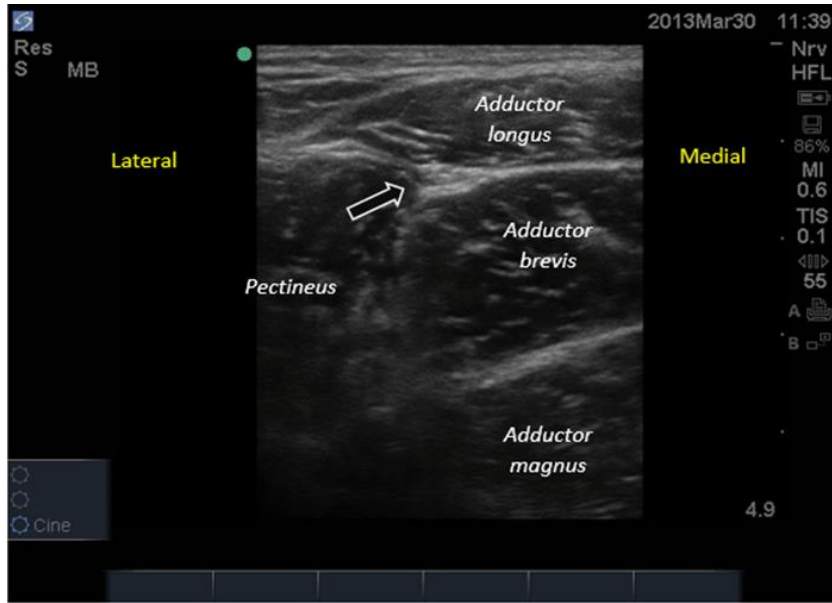


Figure 3: The anterior branch (arrow) at the junction of pectineus muscle (to the left of the arrow-laterally) and the adductor longus (on top) and adductor brevis (below) medially.

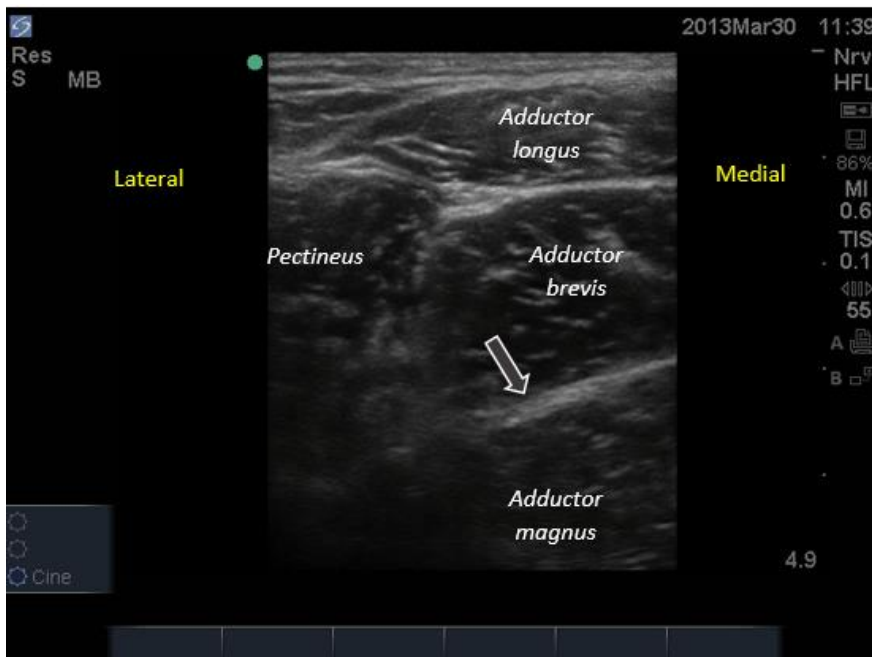


Figure 4: The posterior branch (arrow) lies within the plane between adductor brevis (above) and magnus (below).

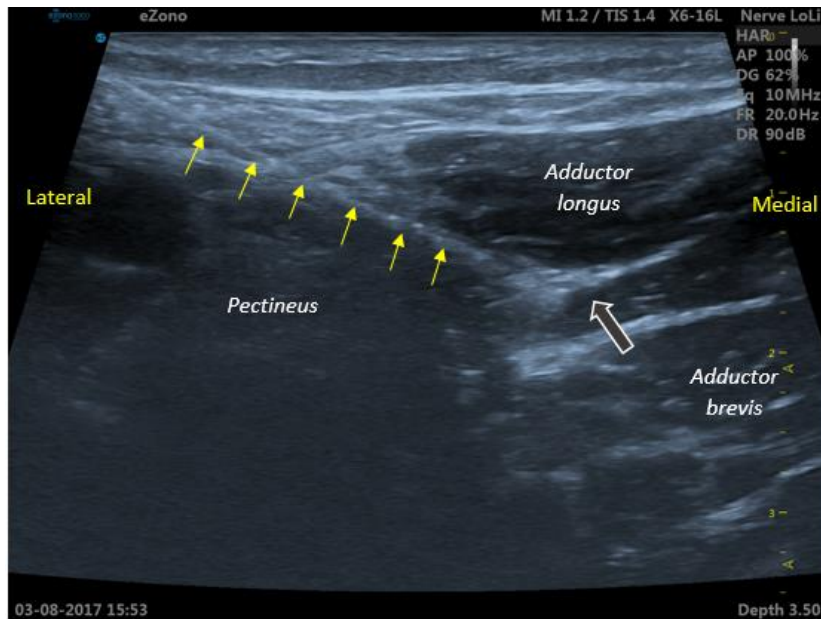


Figure 5 showing block needle (yellow arrows) being advanced towards the anterior branch of the obturator nerve (black arrow).



Figure 6 showing local anaesthetic deposition (blue tint) adjacent to the neural structure (black arrow)

IMPORTANT POINT #5

CONCENTRATION AND DOSES

Block of the nerve usually requires a **maximum** of 10 ml of local anaesthetics in total. (5 ml for each branch).

Onset should be within 10 minutes with **two-third concentration of the maximum strength** of local anaesthetic (0.5% ropivacaine or 0.375% levo-bupivacaine) as **anaesthesia**.

To obtain optimal **analgesic** dynamics without compromising prolonged motor function, a **concentration of half of the maximum strength** is usually adequate.

Duration of action of a motor block with this strength of LA would be approximately 6-12 hours.

SUMMARY

IMPORTANT POINT #1

Transducer is placed at the **MICKEY MOUSE POINT**.

IMPORTANT POINT #2

Slide transducer medially along inguinal crease to view the adductor muscles.

IMPORTANT POINT #3

Anterior and posterior obturator branches lie within the fascias of the adductor muscles.

IMPORTANT POINT #4

The posterior branch often continues distally within the **ADDUCTOR CANAL** to supply the knee.

IMPORTANT POINT #5

- Usual volume is between 5-10 ml at half strength of maximum concentration for analgesic block.
- For surgical anaesthesia, similar volume of at least two-thirds maximum strength preparation is ideal.