Upper Extremity Nerve Blocks


Brachial Plexus Approach

Transducer Placement

Ultrasound Image

Reverse Ultrasound Anatomy™

Anatomy

**Abbreviations**

LC: Lateral Cord
SAM: Serratus Anterior Muscle
LA: Local Anesthetic
PN: Pectoral Nerve
AA: Axillary Artery
IcbN: Intercostobrachial Nerve
AV: Axillary Vein
LA: Local Anesthetic
TCA: Transverse Cervical Artery
EMR: Evoked Motor Response
SV: Subclavian Vein
CL: Clavicle
SA: Subclavian Artery
EJV: External Jugular Vein
BORe: Bolus Observe Reposition
RLN: Recurrent Laryngeal Nerve
LA: Local Anesthetic
T2

**Interventions**

**Indications:** Anesthesia and analgesia for surgery on shoulder, distal clavicle and proximal humerus.

**Patient position:** Supine or semi-sitting, head facing contralateral side.

**Transducer:** Linear.

**Needle:** 22G, 5 cm short bevel.

**Common EMR obtained:** Delirial response. LA: 10–15 ml.

**Initial transducer placement:** Over external jugular vein, approximately 3 cm above clavicle. Alternatively, start at supraclavicular fossa and scan proximally toward the plexus.

**Initial depth setting:** 3 cm.

**Tips:** Use PD to detect and avoid blood vessels on the needle path. Remember in patients with history of significant respiratory disease. Use short actuating LA through catheter in such patients; extend block through catheter if initial block tolerated well.

**Suggested Standard Monitoring For Nerve Blocks**

**Ultrasound + Nerve Stimulation + Opening Injection Pressure (OIP)**

**Needle adequately placed when seen on US**

**Needle placement by US + nerve or fascicle**

**Audible twitch when the needle is placed in the nerve or fascicle**

**1–2 ml injection of LA results in adequate spread**

**Not necessary to look for fasciculus**

**Complete injection**

**Begin**

**1–2 ml injection of LA results in adequate spread**

**Needle adequately placed when seen on US**

**Reposition the needle to ensure R/F fasciculus present at x and y cm**

**Adapt needled place**

**LA: Local Anesthetic**

**Tips:** Ensure sufficient lateral placement of the transducer to avoid chest wall. If a single injection of LA is made where all cords are visible laterally to the artery, or posterior to the artery, block tolerated well.

**Osteotomes**

**Arterial**

**Posterior**

**Dermatomes**

**Anterior**

**Posterior**

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