



Anesthesia Procedure Guide: Module I-Peripheral Nerve Blocks

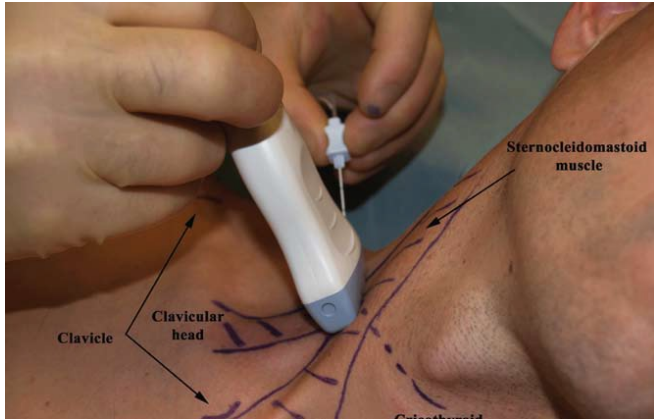
Disclaimer

The materials and content provided has been set out in good faith for information and educational purposes only and is not intended as a substitute for the active involvement and judgement of appropriate professional medical and technical personnel. Neither we, the authors, nor other parties involved in its production make any representations or give any warranties with respect to its accuracy, applicability, or completeness nor is any responsibility accepted for any adverse effects arising as a result of your reading or viewing this material and content. Any and all liability directly or indirectly arising from the use of this material and content is disclaimed without reservation.

Upper Extremities

Interscalene
Supraclavicular
Infraclavicular
Axillary
Forearm/Wrist

INTERSCALENE BLOCK

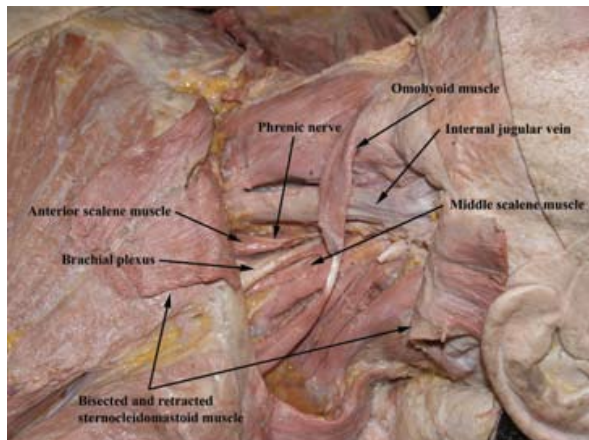


SURGICAL INDICATIONS:

- Distal clavicle
- Shoulder
- Proximal humerus

TARGET TISSUE:

- C5, C6, C7 spinal nerve roots



PROCEDURE:

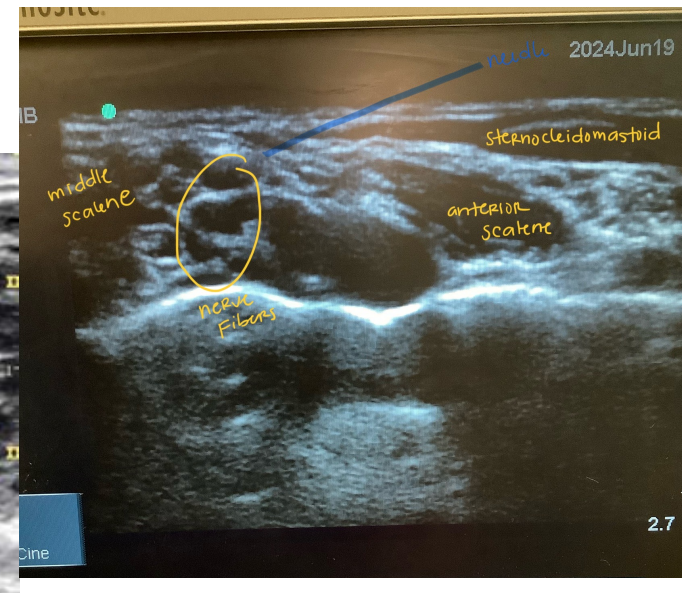
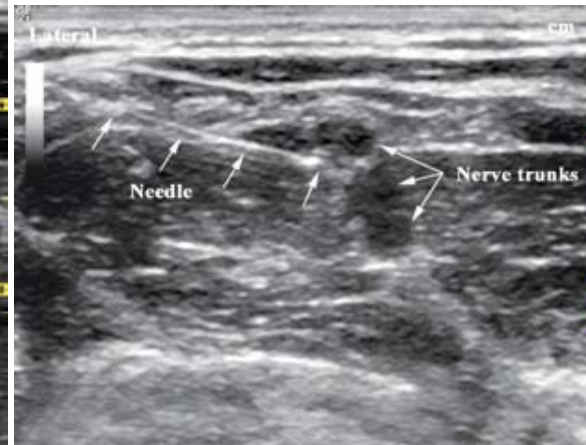
- Probe on supraclavicular fossa, identify subclavian artery, plexus
- Scan superiorly to identify roots in “stoplight” pattern in interscalene cleft at level of cricoid cartilage
- Needle advanced posterior to anterior
- Motor response to stimulation: deltoid, pectoralis, biceps, triceps, forearm, hand

EQUIPMENT:

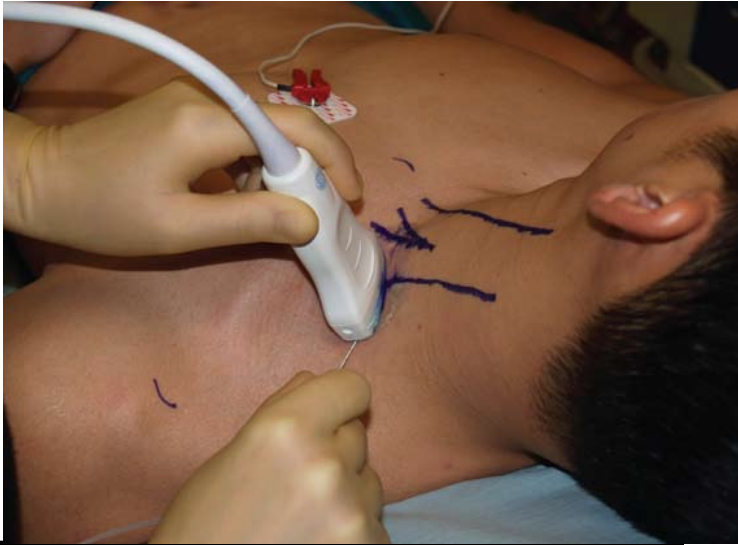
- High-frequency, linear probe
- Short to medium length, insulated, short-bevel needle
- LA volume: 5-15 ml

COMPLICATIONS:

- Horner syndrome
- Hemidiaphragm
- Pneumothorax
- Hoarseness (RL blockade)



SUPRACLAVICULAR BLOCK



PROCEDURE:

- Probe on supraclavicular fossa, identify subclavian artery, first rib, pleura
- Identify plexus lateral to artery
- Needle advanced posterior to anterior
- Inject near lower trunks (deep) then withdraw, redirect, and inject near middle, upper trunks (superficial)
- Motor response to stimulation: biceps, triceps, forearm, hand

EQUIPMENT:

- High-frequency, linear probe
- Short to medium length, insulated, short-bevel needle
- LA volume: 10-20 ml

COMPLICATIONS:

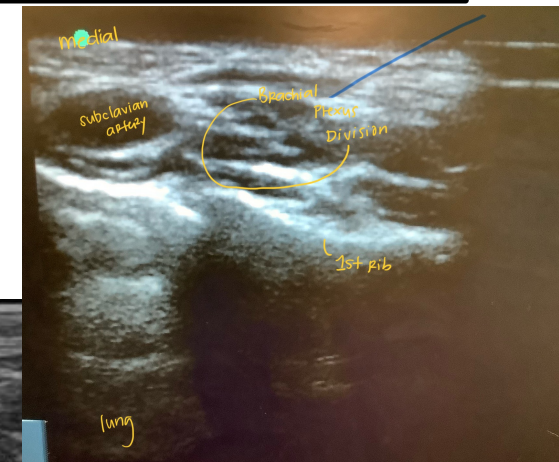
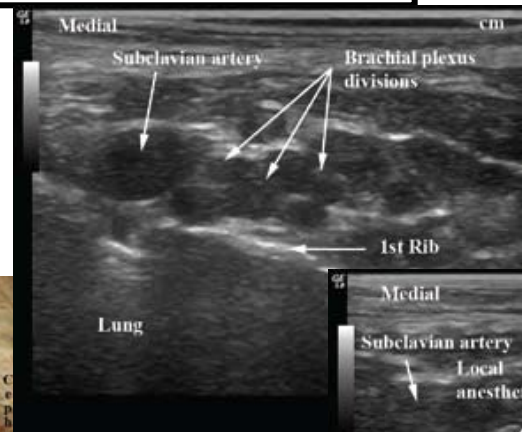
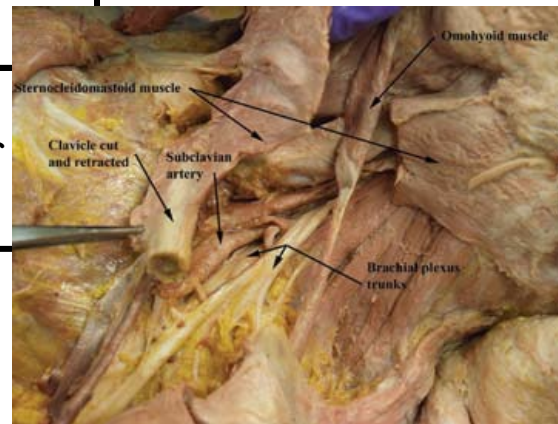
- Horner's syndrome
- Hemidiaphragm
- Pneumothorax

SURGICAL INDICATIONS:

- Lateral shoulder
- Upper arm
- Elbow
- Forearm
- Hand

TARGET TISSUE:

- Upper, middle, lower trunks of brachial plexus



INFRACLAVICULAR BLOCK



PROCEDURE:

- Place the probe in the parasagittal plane just inferior to the clavicle and medial to the coracoid process (deltopectoral groove).
- Identify the axillary artery and vein posterior to pectoralis major and minor muscles.
- The cords of the brachial plexus can be seen as hyperechoic structures around the artery at approximately the 3, 6 and 9 o'clock positions.
- Insert the block needle through the skin, 1-2cm superior to the transducer, and advance in-plane using a superior to inferior direction until the needle tip is adjacent to the posterior cord.

EQUIPMENT:

- High-frequency, linear probe
- Short to medium length, insulated, short-bevel needle
- LA volume: 20-30 ml

COMPLICATIONS:

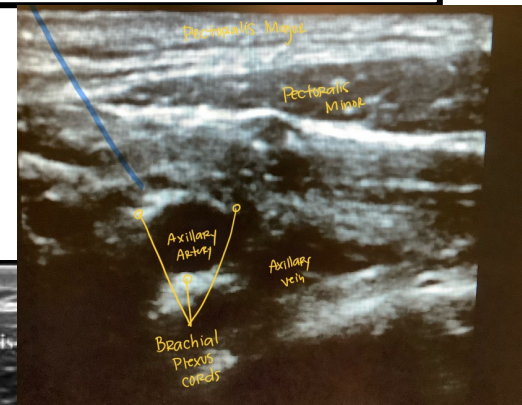
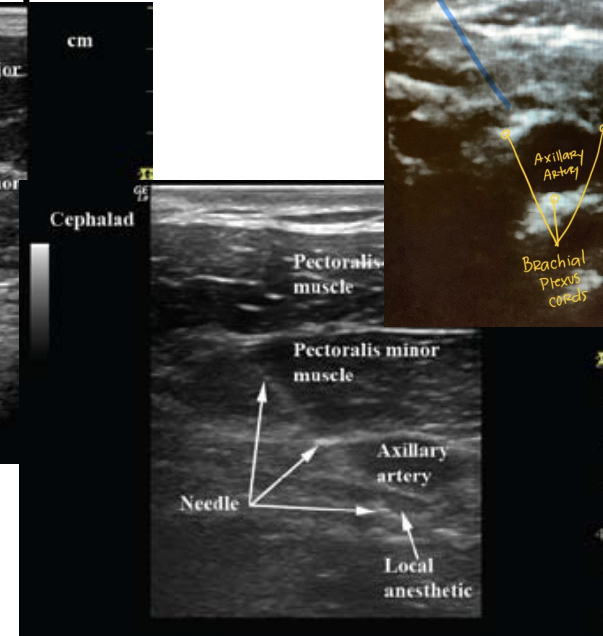
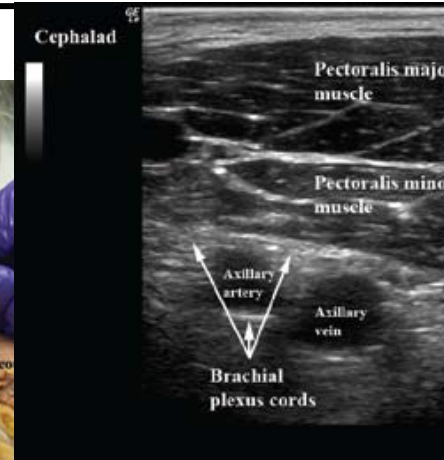
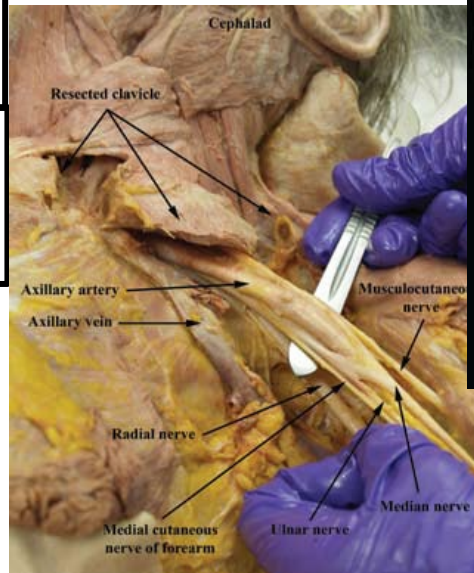
- Pneumothorax
- LAST

SURGICAL INDICATIONS:

- Upper arm,
- Elbow
- Forearm
- Hand

TARGET TISSUE:

- Targets the lateral, posterior, and medial cords of the brachial plexus



AXILLARY BLOCK

PROCEDURE:

- Probe on axillary crease, identify axillary artery
- Identify branches surrounding artery, in lateral muscle (MC)
- Needle advanced cephalad to caudad
- Inject deep to artery (RN), then superficial (MN, UN) before withdrawing to inject MC
- Motor response to stimulation: biceps, forearm, hand, fingers

EQUIPMENT:

- High-frequency, linear probe
- Short to medium length, insulated, short-bevel needle
- LA volume: 20-30 ml



SURGICAL INDICATIONS:

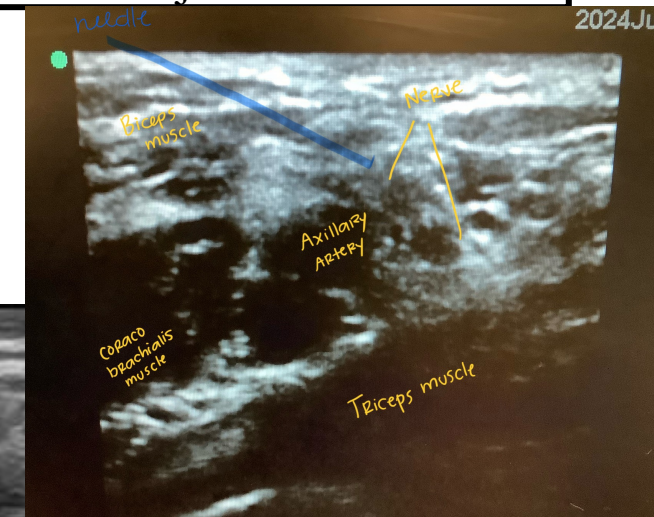
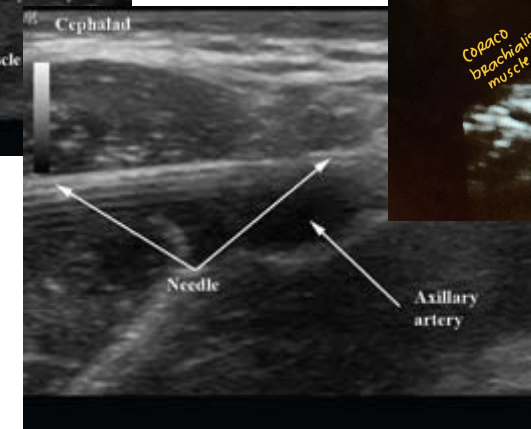
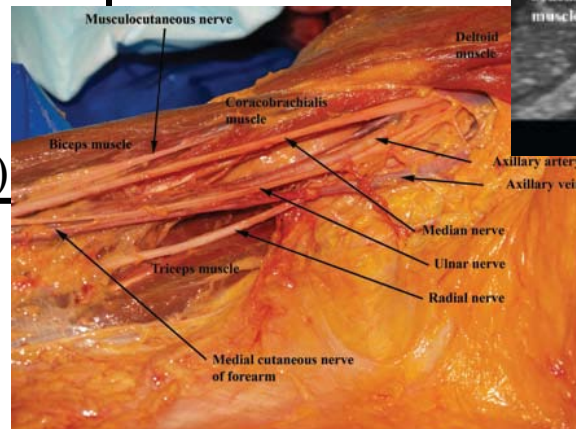
- Elbow
- Forearm
- Wrist
- Hand

TARGET TISSUE:

- Radial nerve (RN), ulnar nerve (UN), median nerve (MN), musculocutaneous nerve (MC)

COMPLICATIONS:

- Intravascular injection



FOREARM/WRIST

SURGICAL INDICATIONS:

- Targets the radial, median, and ulnar nerves within the forearm.

EQUIPMENT:

- High-frequency, linear probe
- Short to medium length, insulated, short-bevel needle
- LA volume: 5 ml per nerve

COMPLICATIONS:

- LAST
- Hematoma
- Intravascular Injection

Median Nerve

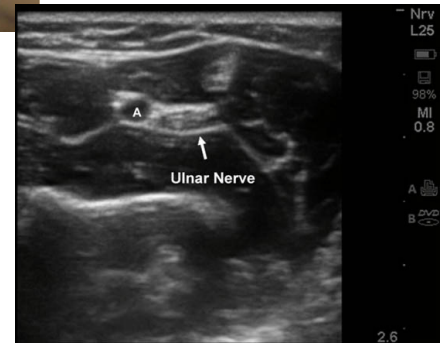
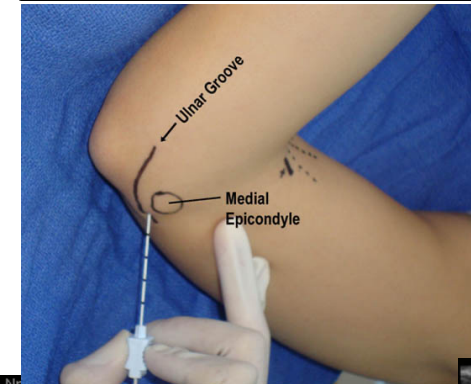
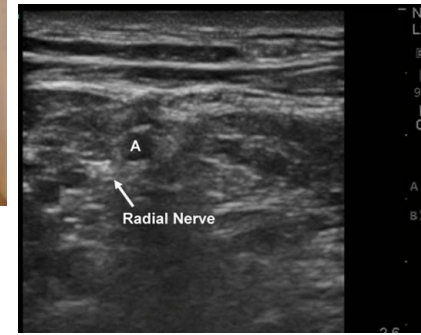
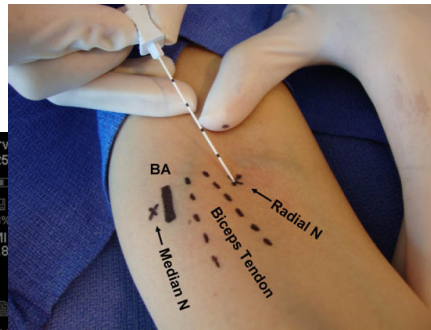
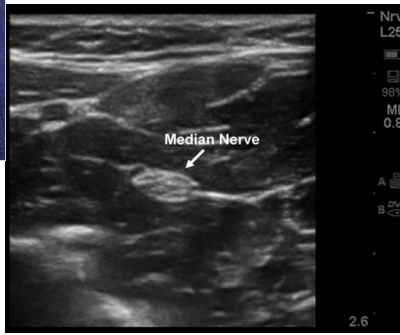
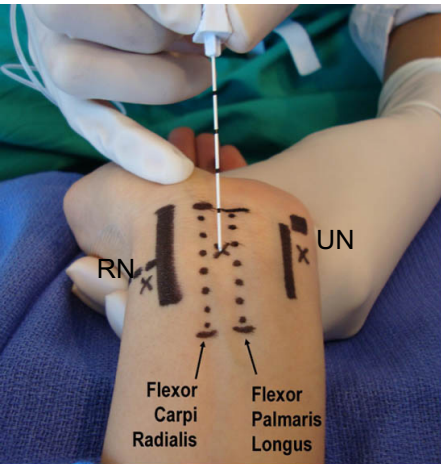
- The median nerve is located slightly lateral (radial) to the palmaris longus tendon and medial (ulnar) to the flexor carpi radialis tendon.

Radial Nerve

At the elbow 2 cm lateral to the biceps tendon at the level of the epicondyles. At the wrist the radial nerve lies along the radial aspect of the wrist, just lateral (radial) to the radial artery at the proximal wrist crease.

Ulnar Nerve

Palpate the flexor carpi ulnaris tendon and the ulnar artery just proximal to the ulnar styloid process.



Lower Extremities

Femoral Nerve Block

Sciatic Nerve Block

Popliteal Sciatic Nerve Block

Pericapsular Nerve Group (PENG) Block

Fascia Iliaca Block

Lateral Femoral Cutaneous Nerve Block

Obturator Nerve Block

Adductor Canal Block

IPack and LIA Block

Genicular Nerve Block

Ankle Block

Intra-articular Block

FEMORAL NERVE BLOCK



PROCEDURE:

- Probe on inguinal crease, identify femoral artery
- Identify two fascial planes, find femoral nerve below deep fascia
- Needle advanced lateral to medial
- Inject deep to nerve, then between nerve and fascia
- Motor response to stimulation: quadriceps, patellar “snap”

EQUIPMENT:

- High-frequency, linear probe
- Medium to long length, insulated, short-bevel needle
- LA volume: 10-20 ml

COMPLICATIONS:

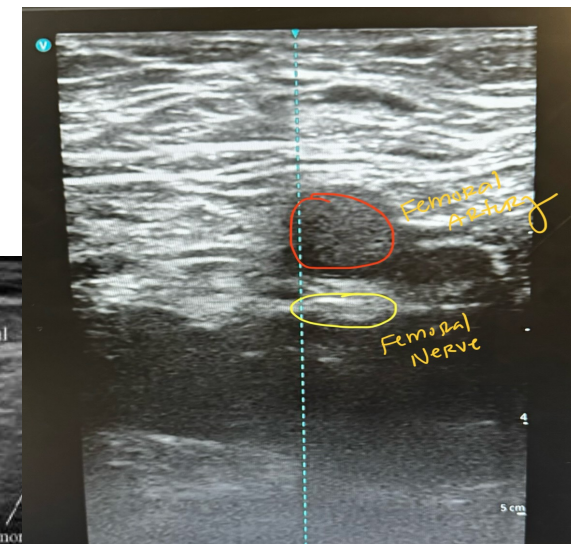
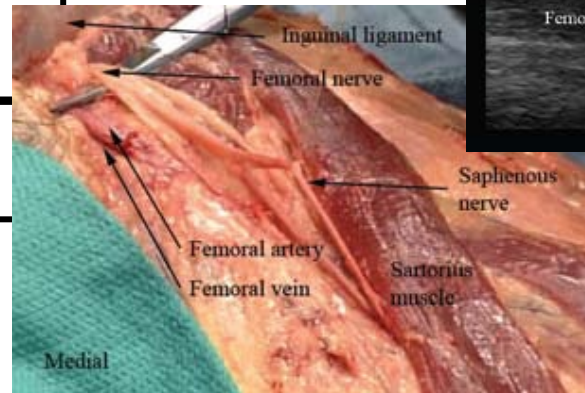
- Temporary loss of ability to bear weight, stand, ambulate

SURGICAL INDICATIONS:

- Anterior hip
- Femur
- Anterior thigh
- Knee/patella
- Anterior component of complete leg block

TARGET TISSUE:

- Femoral nerve



SCIATIC NERVE BLOCK



SURGICAL INDICATIONS:

- Posterior thigh
- Posterolateral knee capsule
- Lower leg below knee
- Posterior component of complete leg block

PROCEDURE:

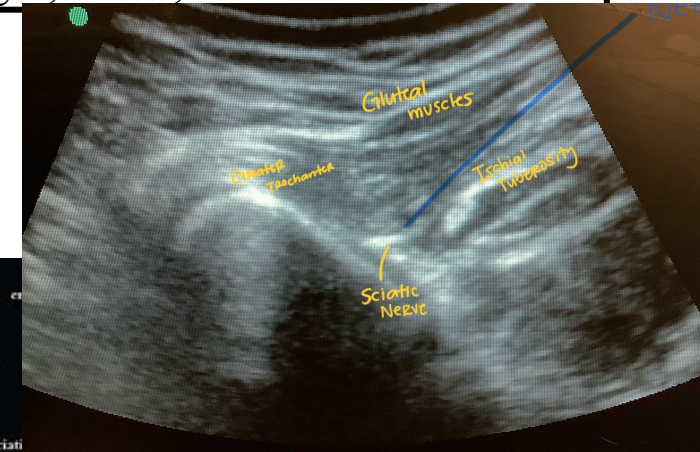
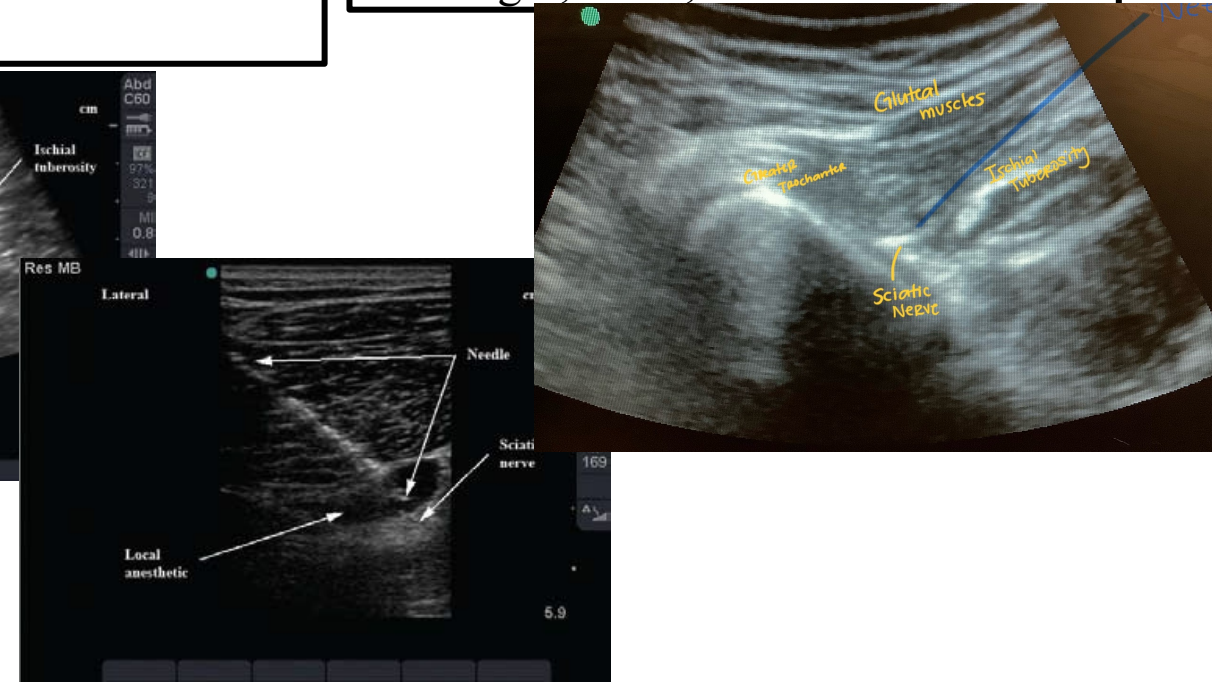
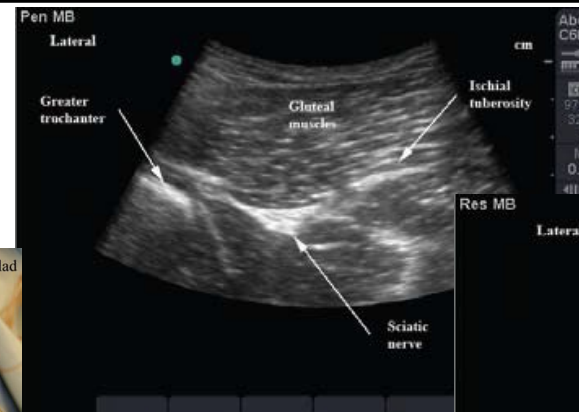
- Probe on imaginary line between greater trochanter (GT) and ischial tuberosity (IT)
- Identify fascial plane, find sciatic nerve in plane near IT
- Needle advanced lateral to medial
- Inject deep to nerve, then between nerve and fascia
- Motor response to stimulation: hamstring, foot dorsiflexion & plantar flexion

EQUIPMENT:

- Low-frequency, curvilinear probe
- Long length, insulated, short-bevel needle
- LA volume: 20 ml

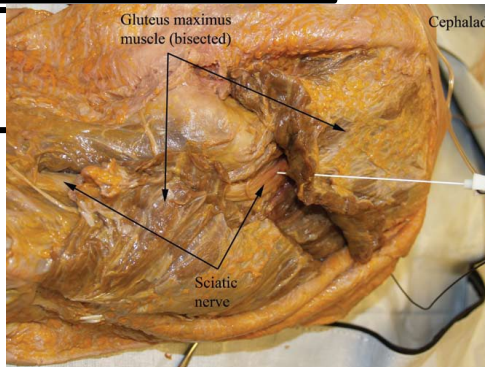
COMPLICATIONS:

- Temporary loss of ability to bear weight, stand, ambulate



TARGET TISSUE:

- Sciatic nerve



POPLITEAL SCIATIC BLOCK



PROCEDURE:

- Probe on popliteal fossa
- Identify popliteal artery/vein, look superficial for nerve tissue
- Scan proximal to find bifurcation of SN into CP and TN
- Needle advanced lateral to medial
- Inject where CP and TN are in proximity, observe separation
- Motor response to stimulation: dorsiflexion/eversion (CP), plantar flexion/inversion (TN)

EQUIPMENT:

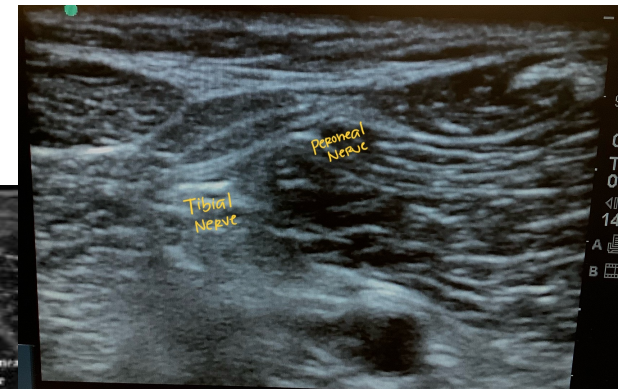
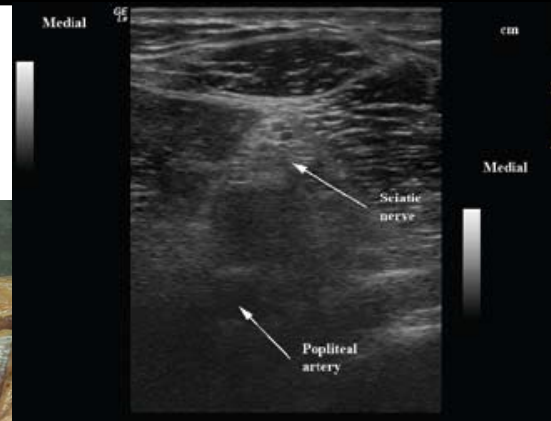
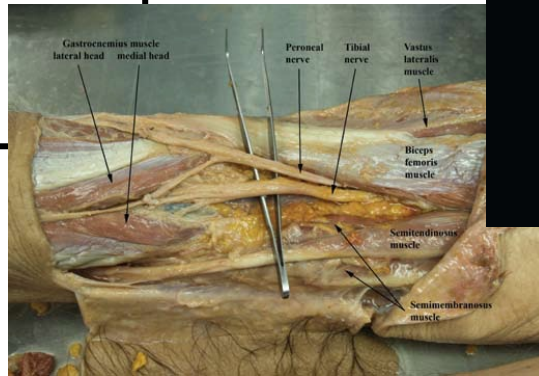
- High-frequency, linear probe
- Medium to long length, insulated, short-bevel needle
- LA volume: 15-20 ml

SURGICAL INDICATIONS:

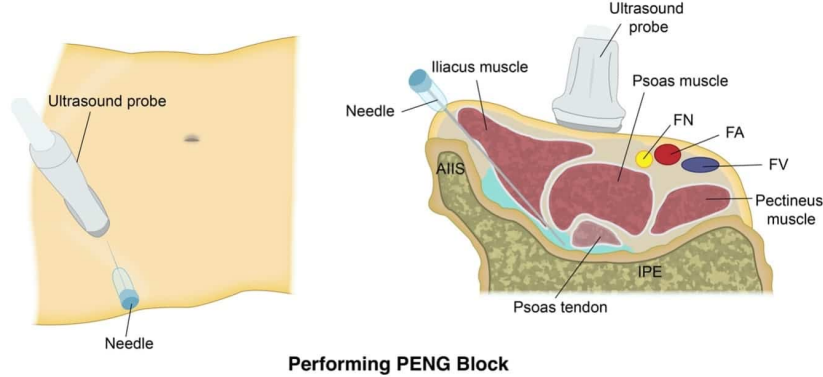
- Anterior, posterior, and lateral lower leg
- Foot
- Lateral ankle

TARGET TISSUE:

- Common peroneal (CP) and tibial nerves (TN), or sciatic nerve (SN)



PERICAPSULAR NERVE GROUP (PENG) BLOCK



PROCEDURE:

- Probe on inguinal crease, identify femoral artery
- Slide superior to identify AIIS, IPE, psoas tendon (PST)
- Needle advanced lateral to medial at steep angle, below PST, until contact with bone
- Inject and confirm fascial dissection and lifting of PST
- No nerve stimulation
- Combine with LFCN block for lateral incision

EQUIPMENT:

- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, insulated, short-bevel needle
- LA volume: 10-20 ml

SURGICAL INDICATIONS:

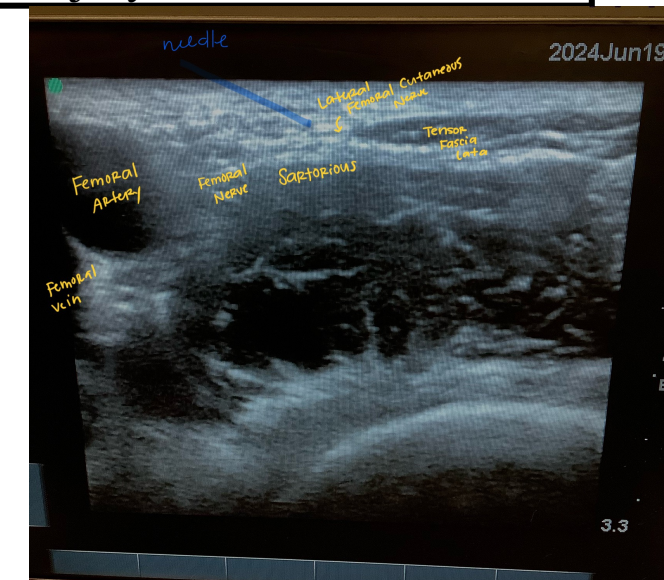
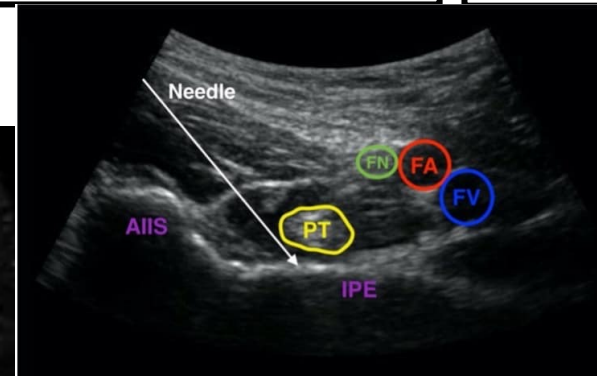
- Hip fracture
- Hip arthroplasty
- Hip arthroscopy

COMPLICATIONS:

- Quadriceps weakness
- Ureter injury
- LFCN injury

TARGET TISSUE:

- Articular branches of femoral, obturator, accessory obturator nerves



FASCIA ILIACA BLOCK

PROCEDURE:

- Probe is placed in a transverse position over the AIIS.
- Rotate the probe to identify AIIS, IPE, psoas tendon (PST).
- Insert the block needle through the skin, 2-3cm lateral to the transducer, and advance in-plane using a lateral to medial direction toward the psoas tendon.
- The needle can be advanced toward the lateral border of the psoas tendon or directly through the tendon, until the tip comes in contact with the pubic bone.

EQUIPMENT:

- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, insulated, short-bevel needle
- LA volume: 10-20 ml

COMPLICATIONS:

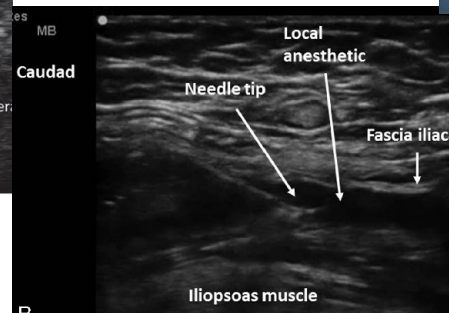
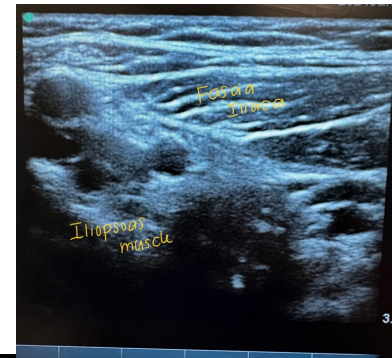
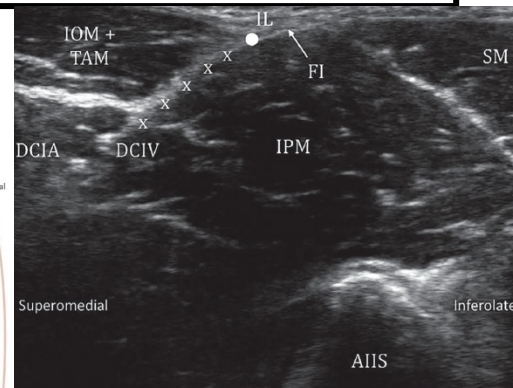
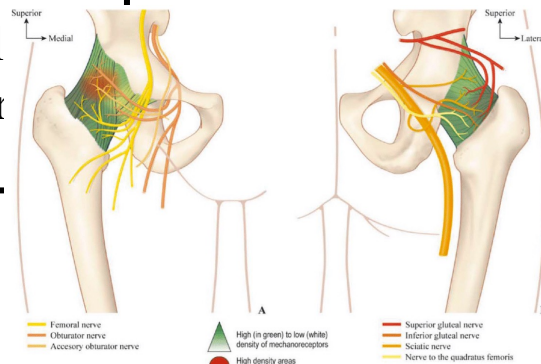
- Quadriceps weakness
- Ureter injury
- LFCN injury

SURGICAL INDICATIONS:

- Hip fracture
- Hip arthroplasty
- Hip arthroscopy

TARGET TISSUE:

- Articular branches of femoral obturator, accessory obturator nerves



LATERAL FEMORAL CUTANEOUS BLOCK



PROCEDURE:

- Probe is placed in a transverse position over the ASIS.
- Slide the transducer distally, several centimeters inferior to the ASIS, until the fat filled tunnel between the sartorius and tensor fascia lata muscles is identified.
- The LFCN can be identified within the tunnel as a round or oval, hyperechoic structure with hypoechoic fascicles (honeycomb appearance).

EQUIPMENT:

- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, insulated, short-bevel needle
- LA volume: 10-20 ml

COMPLICATIONS:

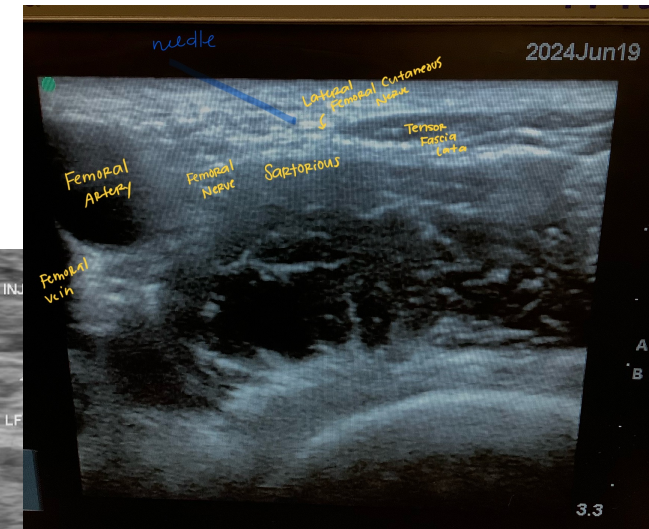
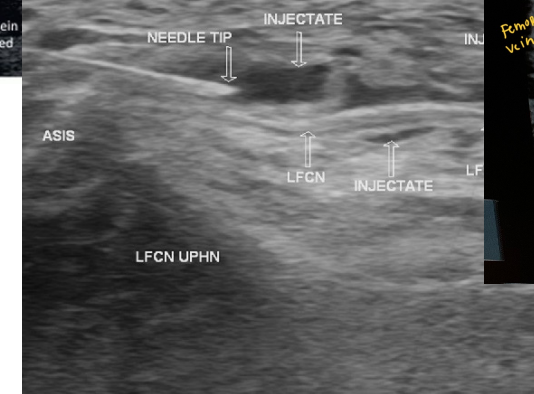
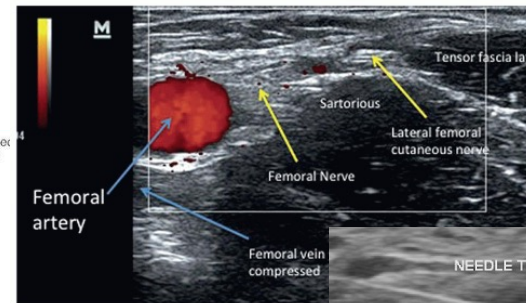
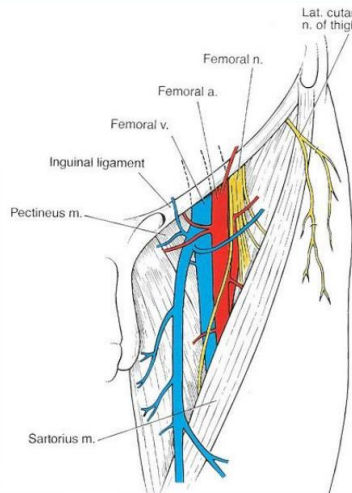
- Quadriceps weakness
- Ureter injury
- LFCN injury

SURGICAL INDICATIONS:

- Analgesia to the anterolateral thigh to the knee, as well as the posterolateral thigh from the greater trochanter to the mid-thigh.

TARGET TISSUE:

- Lateral femoral cutaneous nerve inferior to the anterior superior iliac spine (ASIS)



OBTURATOR BLOCK



SURGICAL INDICATIONS:

- Knee Joint
- Medial Thigh
- TURBT

TARGET TISSUE:

- Anterior and posterior branches of the obturator nerve within the proximal thigh

PROCEDURE:

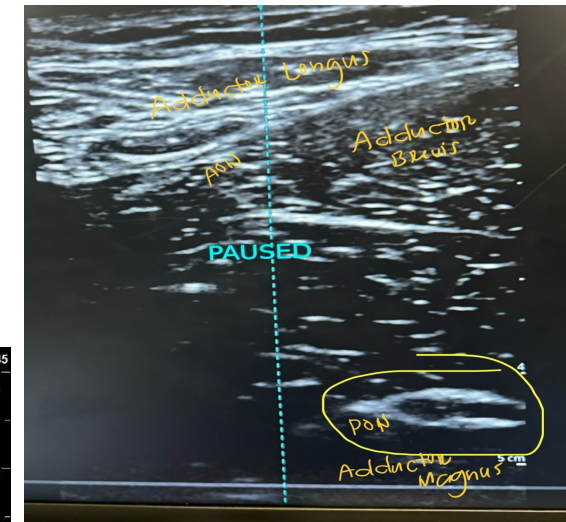
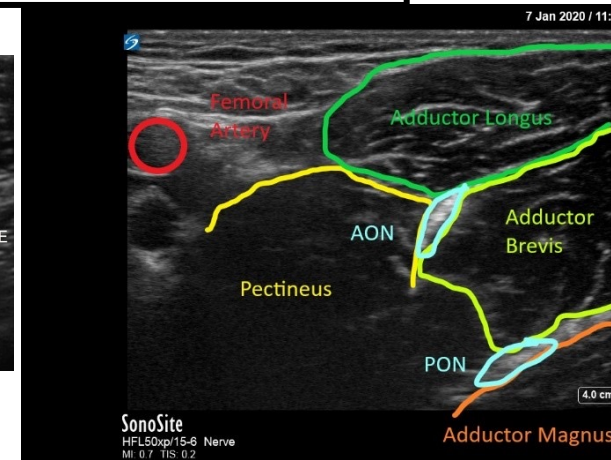
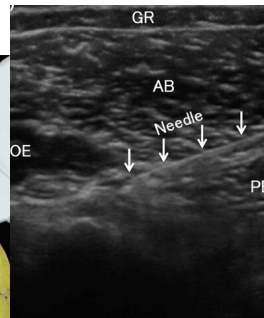
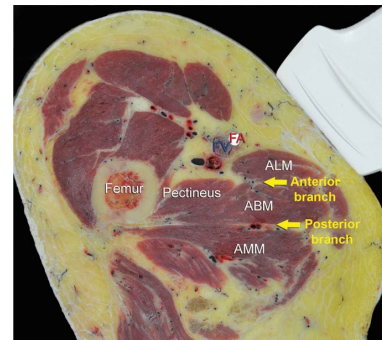
- Probe within or inferior to the inguinal crease
- Slide the transducer medial to identify the pectineus and adductor muscles of the medial compartment
- The anterior branch will appear as a flattened, hyperechoic structure within the fascial plane between the adductor longus and adductor brevis muscles, or the pectineus and adductor brevis muscles.
- The posterior branch will appear as a flattened, hyperechoic structure between the adductor brevis and magnus muscles.
- Advance the needle toward fascial plane between the adductor longus and brevis muscles

EQUIPMENT:

- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, insulated, short-bevel needle
- LA volume: 10-20 ml

COMPLICATIONS:

- Adductor weakness



ADDUCTOR CANAL BLOCK



PROCEDURE:

- Probe on mid-medial thigh
- Identify sartorius, then femoral artery in triangular fascial plane below, saphenous nerve is lateral to artery
- Needle advanced lateral to medial, until tip in triangle
- Inject into fascial plane, observing for spread
- No nerve stimulation

EQUIPMENT:

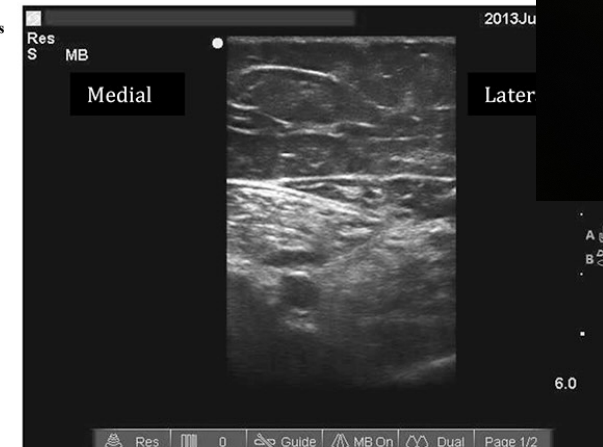
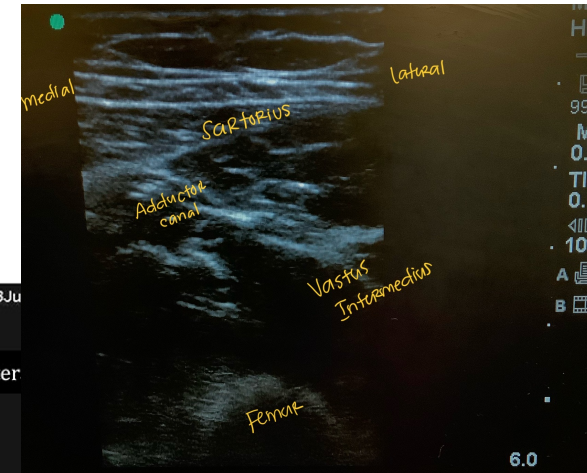
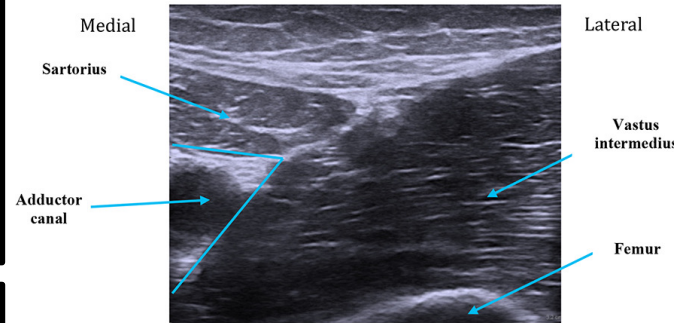
- High-frequency, linear or low-frequency, curvilinear probe
- Medium to long length, insulated, short-bevel needle
- LA volume: 10-20 ml

COMPLICATIONS:

- Intravascular injection

SURGICAL INDICATIONS:

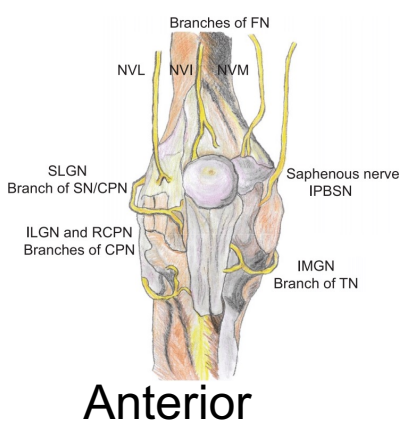
- Anteromedial knee
- Medial lower leg
- Medial aspect of ankle



TARGET TISSUE:

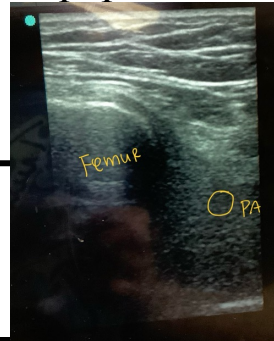
- Saphenous nerve

IPACK AND LIA BLOCK



PROCEDURE:

- Place the transducer in a transverse position along the posteromedial aspect of the distal thigh, 1-2 fingerbreadths proximal to the patellar base
- The needle is advanced within the interspace between the popliteal artery and femur until the needle tip extends 2cm beyond the lateral border of the artery. Begin injecting local and slowly withdraw the needle creating a field block between the popliteal artery and femur.



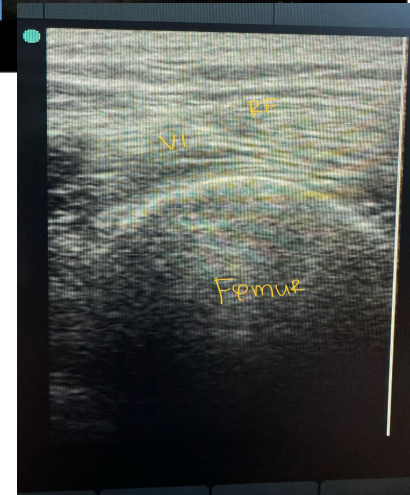
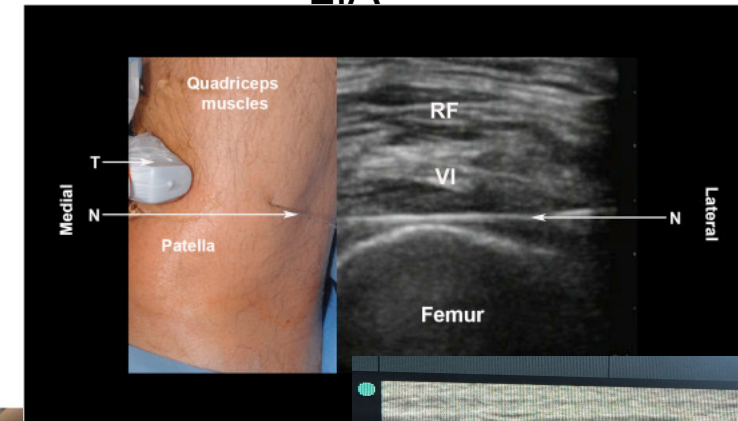
IPACK



EQUIPMENT:

- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, insulated, short-bevel needle
- LA volume: 10-20 ml

LIA



SURGICAL INDICATIONS:

- Hip fracture
- Hip arthroplasty
- Hip arthroscopy

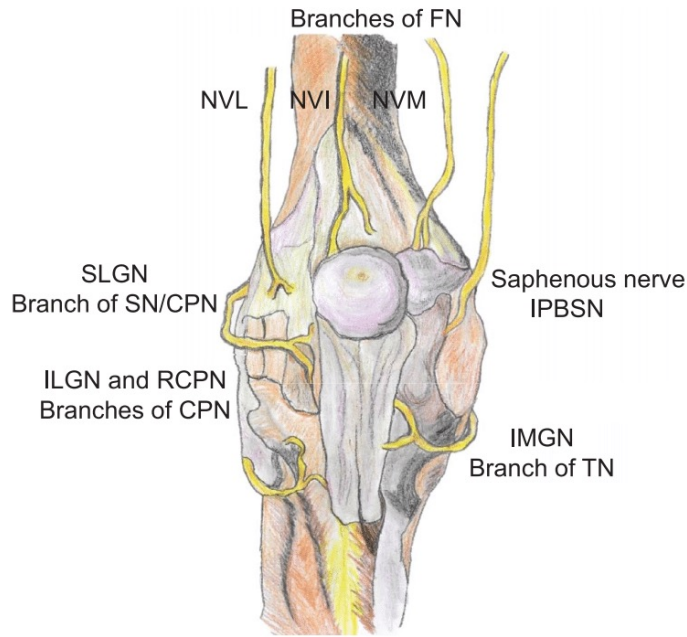
TARGET TISSUE:

- Articular branches from the sciatic nerve and the posterior branch of the obturator nerve
- Posterior (IPACK)/Anterior (LIA) Knee Capsule

COMPLICATIONS:

- Common Peroneal Weakness

GENICULAR BLOCK



PROCEDURE:

- Probe should be placed in each of the locations noted in the image.
- The paired artery and nerve are located on the surface of the femur, use of color (doppler) mode may aid in visualization.
- When infiltrating the vastus intermedius there is no vascular association, and it is based on musculoskeletal structure alone.

EQUIPMENT:

- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, insulated, short-bevel needle
- LA volume: 10-20 ml

COMPLICATIONS:

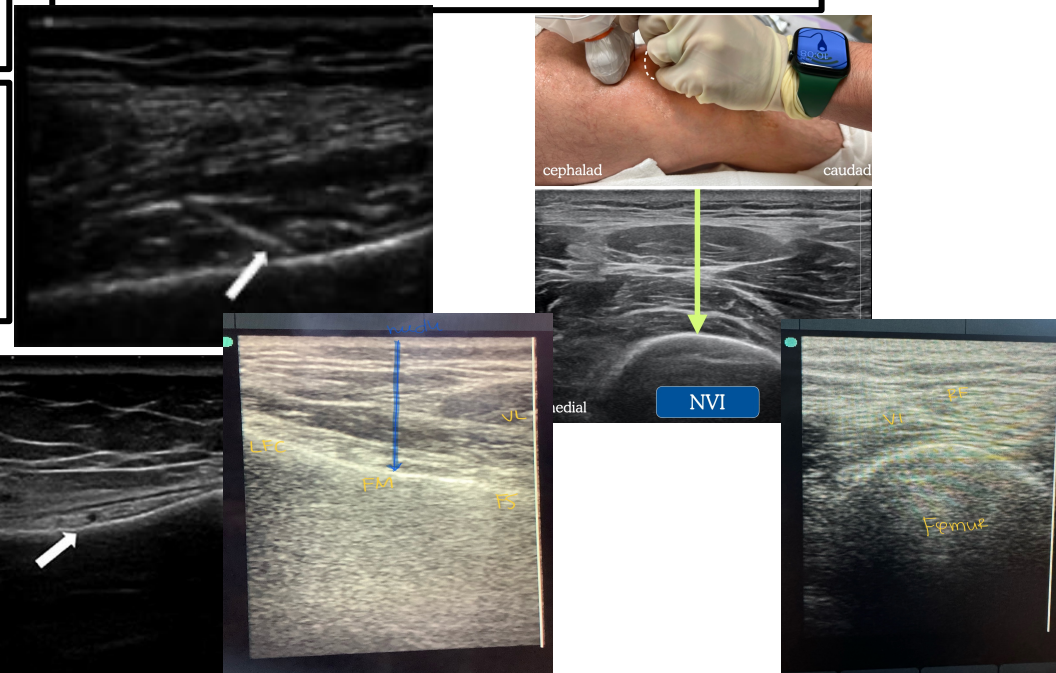
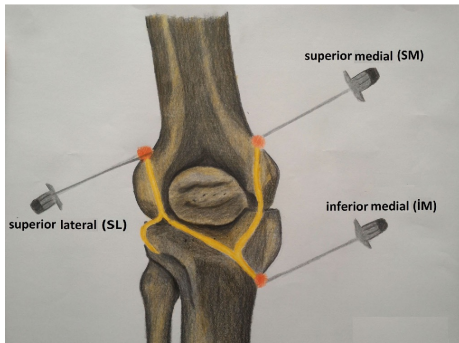
- LAST
- Nerve Injury

SURGICAL INDICATIONS:

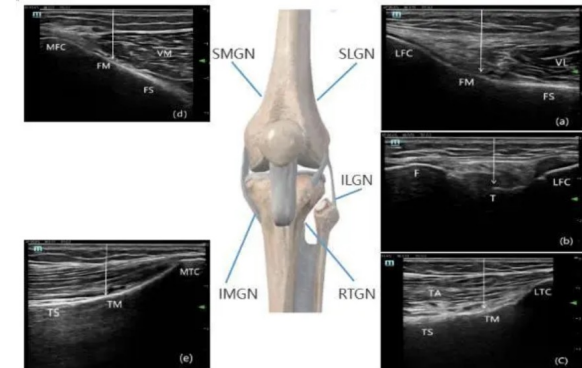
- Knee Surgery

TARGET TISSUE:

- Targets the superolateral, superomedial, and inferomedial genicular nerves

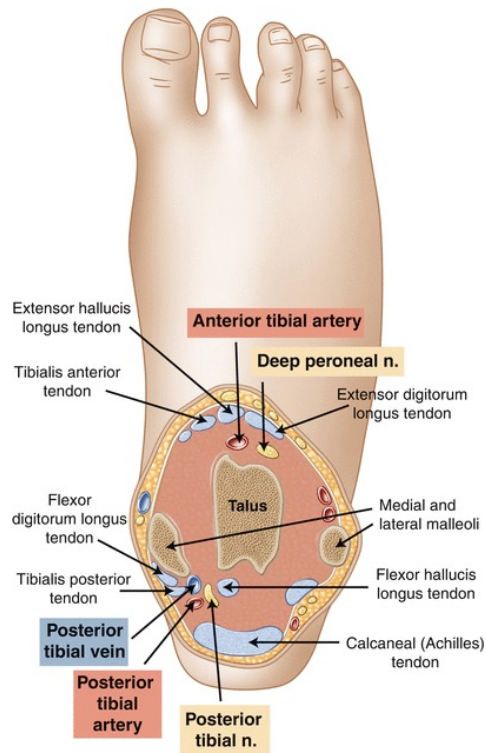


Genicular with IPack



(a) Target point for SLGN (Superior Lateral Genicular Nerve); (b) Target point for ILGN (Inferior Lateral Genicular Nerve); (c) Target point for RTGN (recurrent tibial genicular nerve); (d) Target point for SMGN (Superior Medial Genicular Nerve); (e) Target point for IMGN (Inferior Medial Genicular Nerve); White line: Needle Insertion Point; F: Fibula; FM: Femoral Metaphysis; FS: Femoral Shaft; LFC: Lateral Femoral Condyle; LTC: Lateral Tibial Condyle; MFC: Medial Femoral Condyle; MTC: Medial Tibial Condyle; T: Tibia; TA: Tibialis Anterior; TM: Tibial Metaphysis; TS: Tibial Shaft; VL: Vastus Lateralis; VM: Vastus Medialis

ANKLE BLOCK



SURGICAL INDICATIONS:

- Analgesia of the foot distal to the malleoli

TARGET TISSUE:

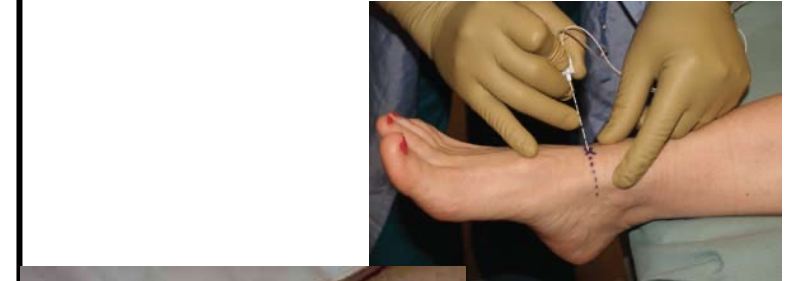
- Targets the tibial, saphenous, deep peroneal, superficial peroneal, and sural nerves at the level of the ankle

PROCEDURE:

- Make initial injection on the anterior ankle, make a skin wheel then travel down to the tibia, withdraw the needle slightly, these two injections will localize the deep peroneal nerve.
- Then track laterally to localize the saphenous nerve and medially to localize the superficial peroneal nerve.
- Second injection should be lateral above the lateral malleolus, after a skin wheel fan anterior and posterior to localize the saphenous and posterior tibial.
- The final injection should be medial above the medial malleolus, after a skin wheel fan anterior and posterior to localize the superficial peroneal nerve and sural nerve.

EQUIPMENT:

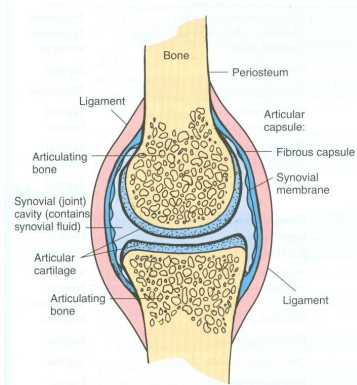
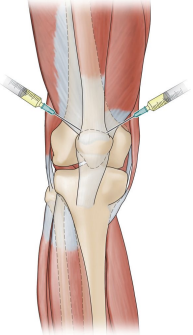
- High-frequency, linear probe
- Short length, insulated, short-bevel needle
- LA volume: 10-30 ml



INTRARTICULAR BLOCK (Knee and Shoulder)

Suprapatellar

Infrapatellar



SURGICAL INDICATIONS:

- Knee Surgery
- Shoulder Surgery

TARGET TISSUE:

- Multiple receptors throughout the knee and shoulder joint.

PROCEDURE:

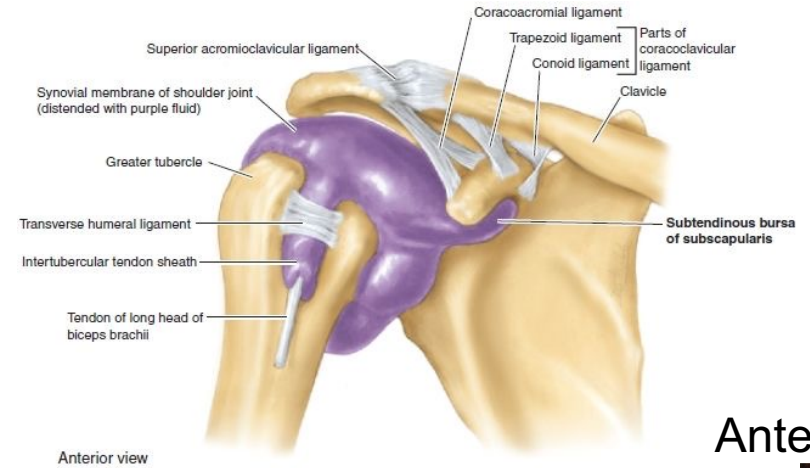
- Place the probe over the joint space identifying the synovial cavity.
- Advance a partially filled syringe into the synovial joint, aspirating fluid to confirm placement.
- Upon confirmation inject the local anesthetic.

EQUIPMENT:

- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, insulated, short-bevel needle
- LA volume: 10-20 ml

COMPLICATIONS:

- LAST
- Nerve Injury



Anterior



Posterior



Truncal

Erector Spinae Block (ESP)

Transversus Abdominal Plane Block (Mid-Axillary)

Quadratus Lumborum (QL 1)

PECS I/II Block

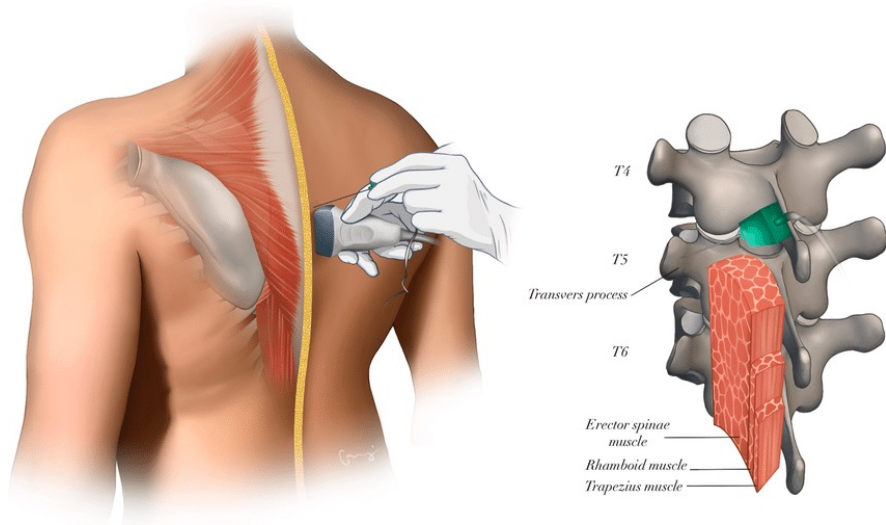
Serratus Plane Block

Paravertebral Block

Ilioinguinal-Iliohypogastric Block

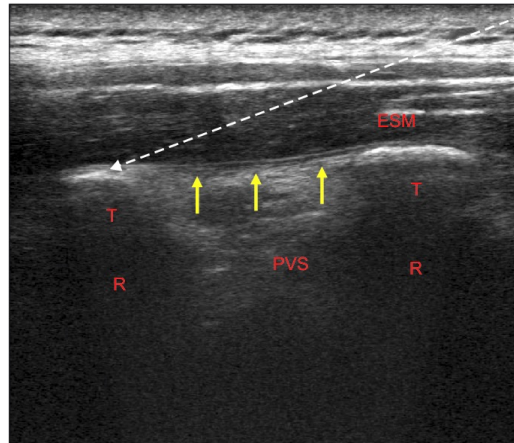
Clavipectoral Block

ERECTOR SPINAE BLOCK



PROCEDURE:

- Probe in transverse axis over thoracic vertebrae at desired level
- Identify TP and slide probe to center target
- Rotate probe 90° to longitudinal axis, identify TP
- Slide lateral to identify rib/pleura then slide back medial to TP
- Advance needle superior to inferior until solid contact with TP
 - Inject and observe for hydro-dissection of ES away from TP (REPEAT CONTRALATERALLY)



EQUIPMENT:

- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, short-bevel needle
- LA volume: 40-80 ml (divided bilaterally and/or among levels)

COMPLICATIONS:

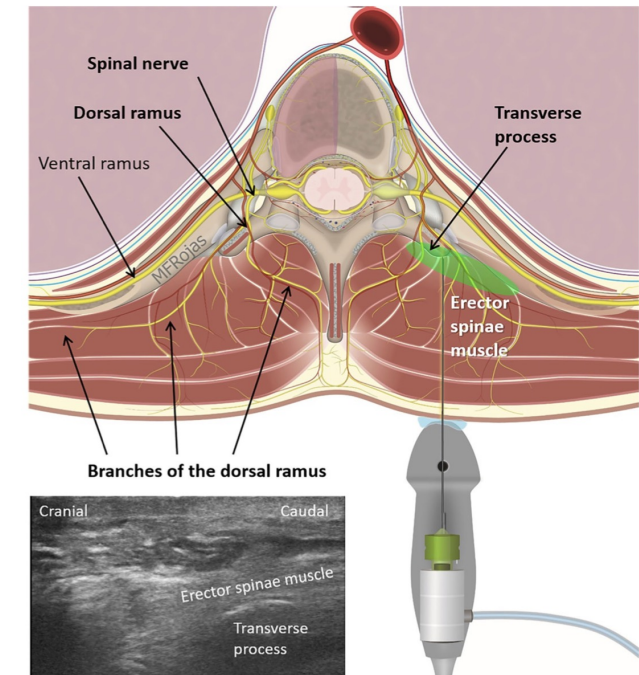
- Pneumothorax
- Autonomic neuropathy

SURGICAL INDICATIONS:

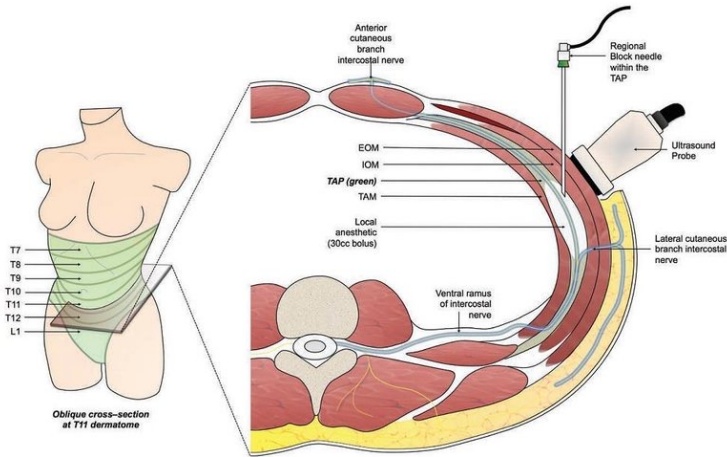
- Thorax: rib fx, thoracic procedures, breast, sternotomy
- Abdominal (open/laparoscopic)
- Spine

TARGET TISSUE:

- Fascial plane between erector spinae muscle (ES) and transverse process (TP) of vertebrae



TRANSVERSUS ABDOMINUS PLANE BLOCK



SURGICAL INDICATIONS:

- Abdominal (open/laparoscopic)
- Upper pelvic (open/laparoscopic)
- Cesarean section

TARGET TISSUE:

- Transversus abdominus (TA)/internal oblique (IO) fascial plane

COMPLICATIONS:

- Disruption of peritoneum
- Bowel injury

PROCEDURE:

MIDAXILLARY APPROACH

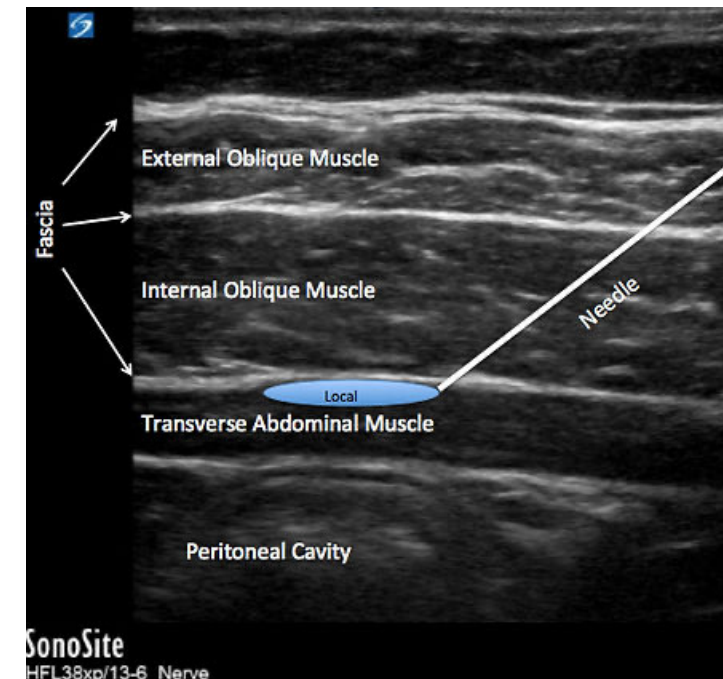
- Probe in transverse orientation, midaxillary line
- Identify peritoneum, TA, IO, and external oblique
- Advance needle anterior to posterior until tip is within TA/IO fascial plane (2nd “pop”)
- Inject, observe hydro-dissection

SUBCOSTAL APPROACH

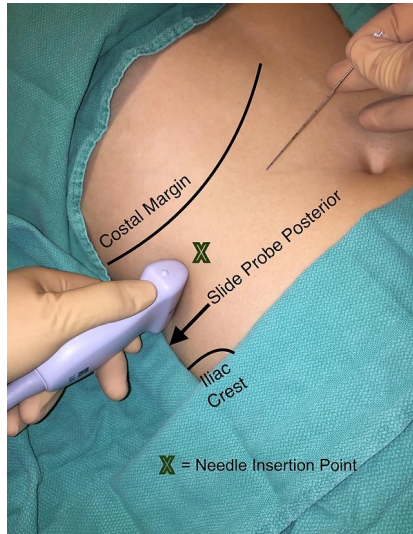
- Probe in oblique orientation, anterior at subcostal margin
- Identify peritoneum, TA, IO, and external oblique
- Advance needle medial to lateral until tip is within TA/IO fascial plane (2nd “pop”)
- Inject, observe hydro-dissection (REPEAT CONTRALATERALLY)

EQUIPMENT:

- High-frequency, linear or low-frequency, curvilinear probe
- Medium to long length, short- bevel needle
- LA volume: 20-80 ml (divided between sides and midaxillary/ subcostal sites)



QUADRATUS LUMBORUM (QL 1)



SURGICAL INDICATIONS:

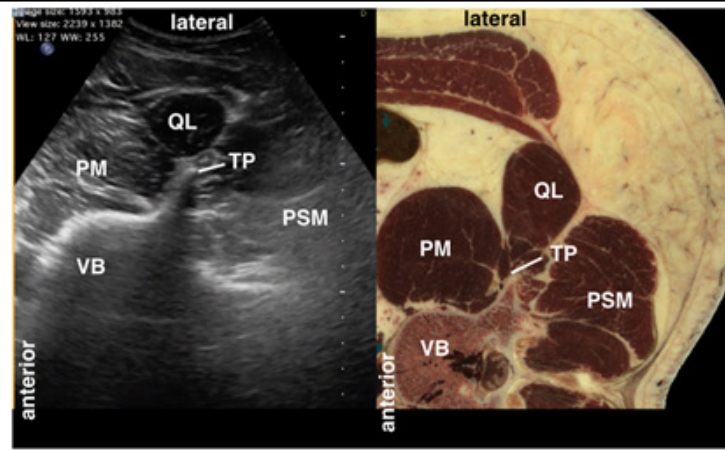
- Abdominal (open/laparoscopic)
- Upper pelvic (open/laparoscopic)
- Cesarean section
- Provides somatic and visceral analgesia, TAP may be somatic only

TARGET TISSUE:

- Fascial plane deep to the transverse abdominis and lateral to the quadratus lumborum.

PROCEDURE:

- Transducer is placed on the midaxillary line between the iliac crest and costal margins.
- The external oblique, internal oblique and transverse abdominis muscles should be easily identified. The transducer is then moved posterior until the aponeurosis of the transverse abdominis muscle is identified.
- Needle is inserted in plane anterior to the transducer. The target for deposition of local anesthetic is deep to the TAM aponeurosis (thoracolumbar fascia) lateral to the QL muscle.

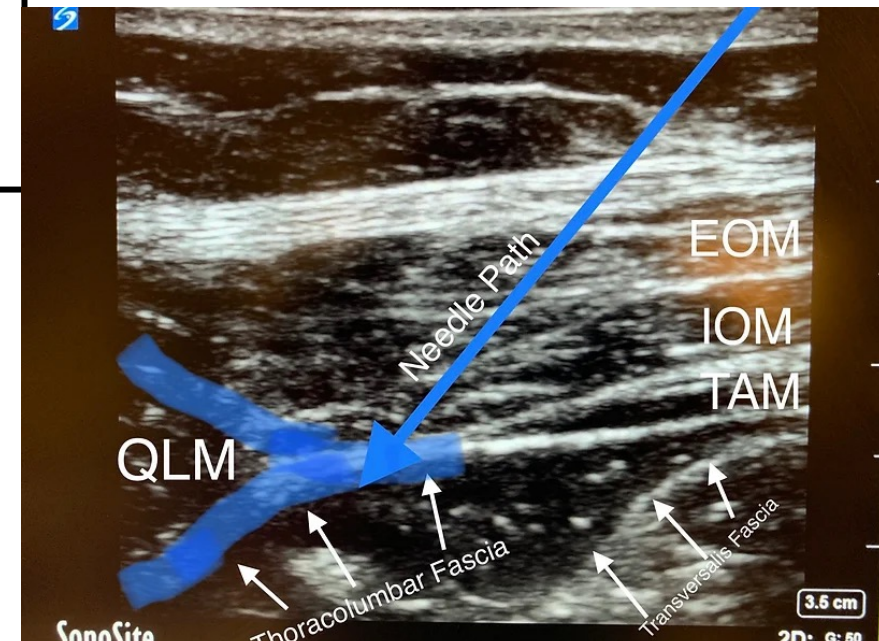


EQUIPMENT:

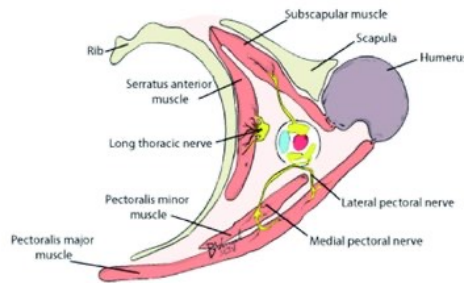
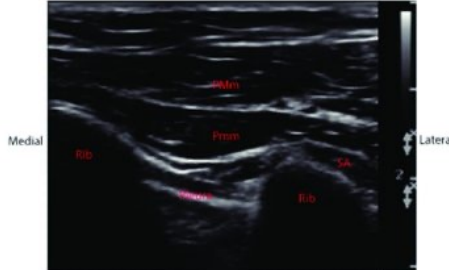
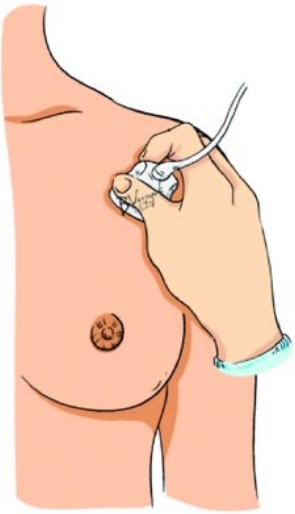
- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, short-bevel needle
- LA volume: 40-80 ml (divided bilaterally and/or among levels)

COMPLICATIONS:

- Disruption of peritoneum
- Bowel injury



PECS I/II BLOCK



SURGICAL INDICATIONS:

- Anterolateral chest wall
- Anterior axilla
- Breast

TARGET TISSUE:

- PECS I- pec minor/pec major fascial plane
- PECS II- serratus anterior (SAM)/pec minor fascial plane

PROCEDURE:

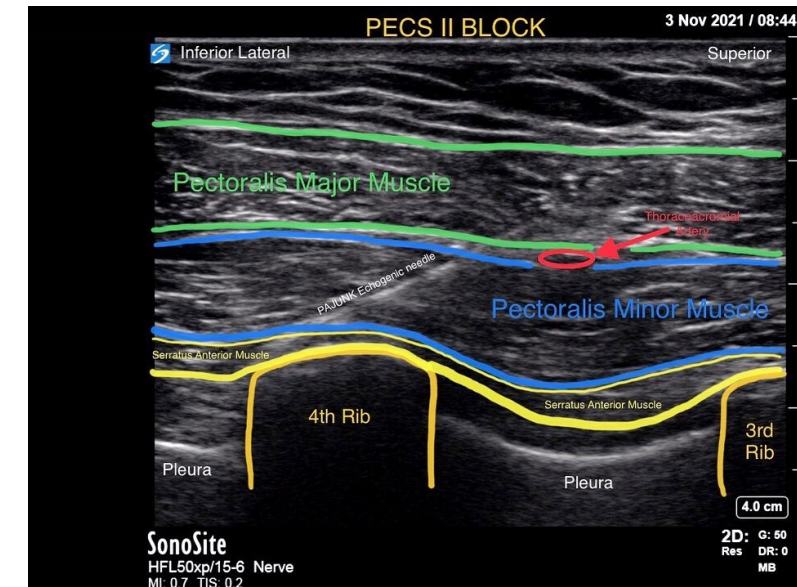
- Probe in longitudinal plane inferior to clavicle, medial to coracoid process
- Identify axillary artery and 2nd rib below artery
- Slide inferior to 4th rib, rotate probe 45° to match angle of thorax
- Identify 4th rib, SAM, pec minor, pec major
- Advance needle superior to inferior, until tip is in SAM/pec minor fascial plane
- Inject PECS II, observe hydrodissection
- Withdraw needle until tip is in pec minor/pec major fascial plane
- Inject PECS I, observe hydrodissection

EQUIPMENT:

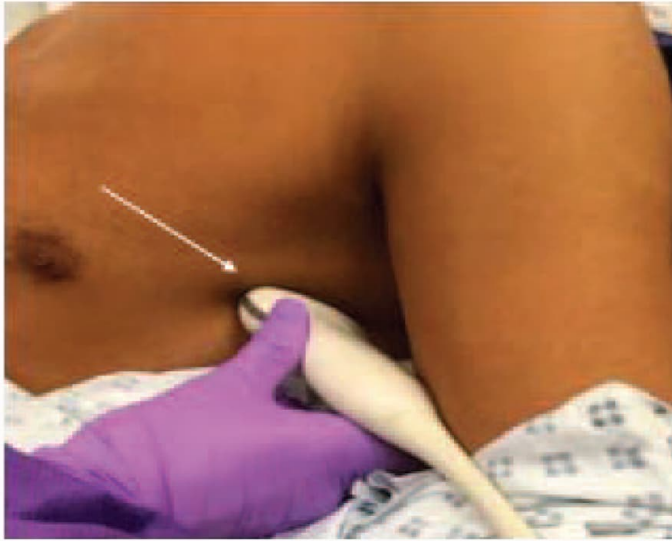
- High-frequency, linear probe
- Medium length, short-bevel needle
- LA volume: 30-40 ml (divided between I & II)

COMPLICATIONS:

- Pneumothorax
- Distortion of tissue in complex dissection



SERRATUS BLOCK



PROCEDURE:

- Place the probe along the mid-axillary line at the level of the 4th or 5th rib.
- Insert the needle through the skin, advance caudad to cephalad direction until the needle tip is within the fascial plane between the latissimus dorsi and serratus anterior muscles.

EQUIPMENT:

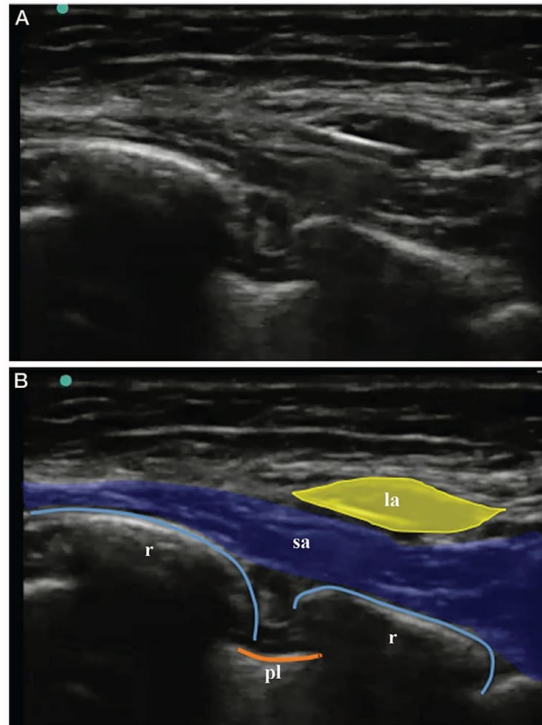
- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, short-bevel needle
- LA volume: 20-30ml

SURGICAL INDICATIONS:

- Breast Surgery
- Chronic pain after mastectomy
- Rib fracture(s)
- Thoracoscopy
- Thoracotomy

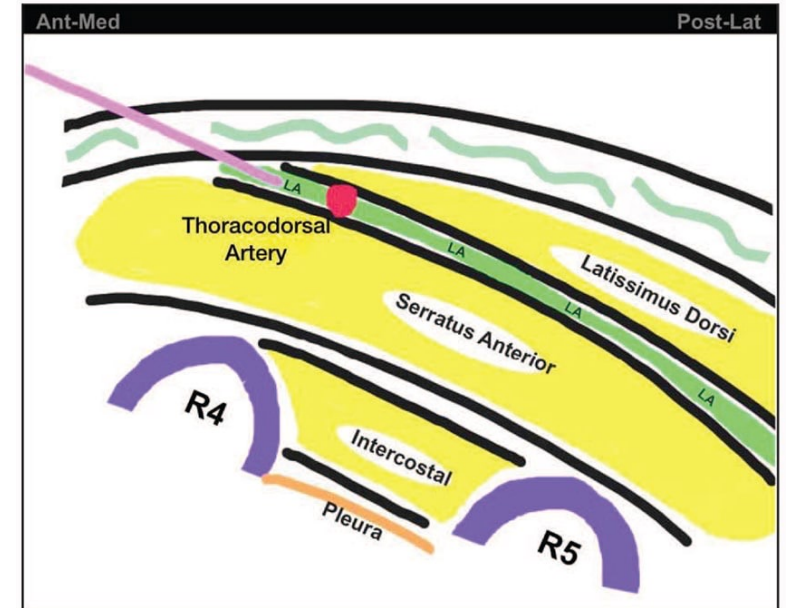
TARGET TISSUE:

- Fascial plane either superficial or deep to the serratus anterior muscle



COMPLICATIONS:

- Pneumothorax
- LAST

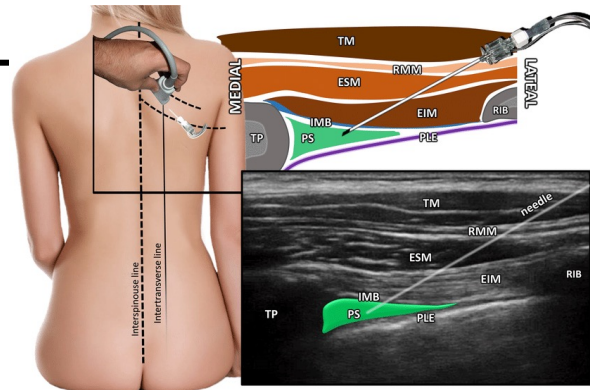


PARAVERTEBRAL BLOCK



PROCEDURE:

- Place the probe in a caudocranial orientation about 5 cm from midline at the level.
- Slide lateral and identify the ribs (round).
- Then move the probe medially, look for the transition of ribs to transverse processes (flat).
- Insert the needle, caudad to the transducer, and advance in-plane using a caudad to cephalad direction until the needle passes through the superior costotransverse ligament and enters the paravertebral space



EQUIPMENT:

- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, short-bevel needle
- LA volume: 30-40 ml (divided bilaterally and/or among levels)

COMPLICATIONS:

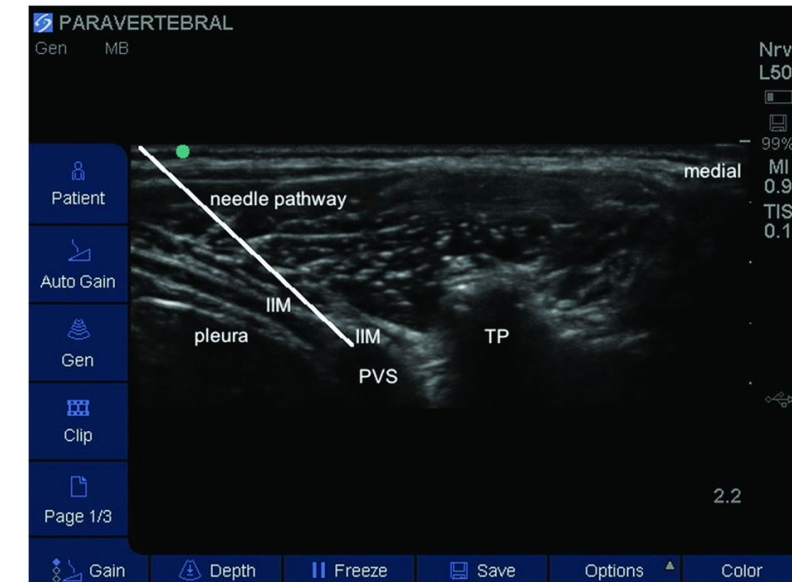
- Pneumothorax
- Epidural Spread

SURGICAL INDICATIONS:

- Thorax: rib fx, thoracic procedures, breast, sternotomy
- Abdominal (open/laparoscopic)
- Spine

TARGET TISSUE:

- Dorsal/ventral rami, and sympathetic trunk within the thoracic paravertebral space



ILIOINGUINAL-ILIOHYPOGASTRIC BLOCK



PROCEDURE:

- Probe is placed in a transverse position just above the iliac crest near the mid-axillary line
- Slide the probe in an anterior direction along the iliac crest, until the aponeurosis of the TAM can be identified.
- Insert the needle through the skin, 2-3cm medial to the probe, and advance in-plane using a medial to lateral direction until the needle tip is within the fascial plane between the IOM and TAM.

EQUIPMENT:

- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, short-bevel needle
- LA volume: 40-80 ml (divided bilaterally and/or among levels)

COMPLICATIONS:

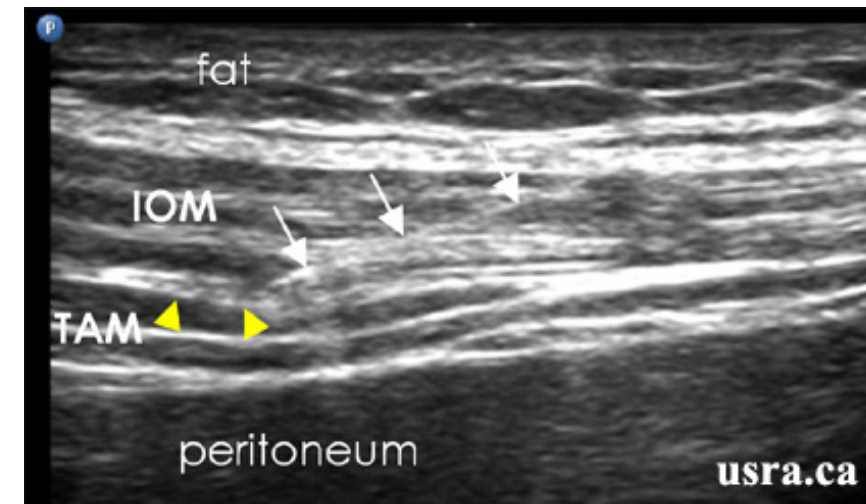
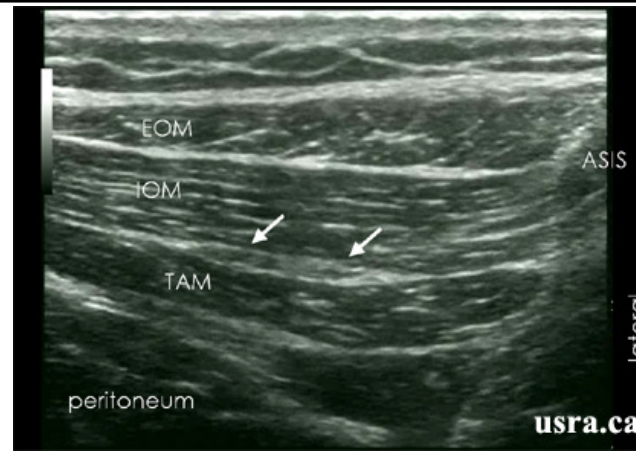
- Bowel Perforation
- Femoral Nerve Blockade

SURGICAL INDICATIONS:

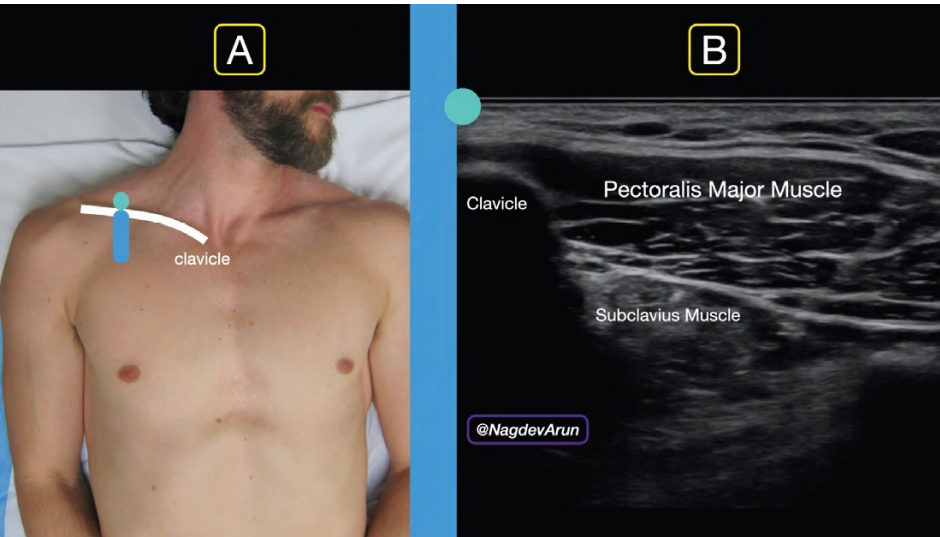
- Inguinal Hernia Repair
- Suprapubic Incisions

TARGET TISSUE:

- Ilioinguinal and iliohypogastric nerves traveling within the transversus abdominis plane



Clavipectoral Block



PROCEDURE:

- Visualize the needle tip advancing through the pectoralis major to the inferior aspect of the clavicle
- Ensure continuous needle visualization until the block needle meets the clavicle; resistance may be felt as it goes through the clavipectoral fascia and touches the ostium of the clavicle
- Gently inject 1 to 2 cc of anesthetic to hydrodissect the clavipectoral fascia from the clavicle, then inject 10-15ml.
- Repeat on both sides of the fracture

EQUIPMENT:

- High-frequency, linear probe or low-frequency, curvilinear probe
- Long length, short-bevel needle
- LA volume: 20-30ml

COMPLICATIONS:

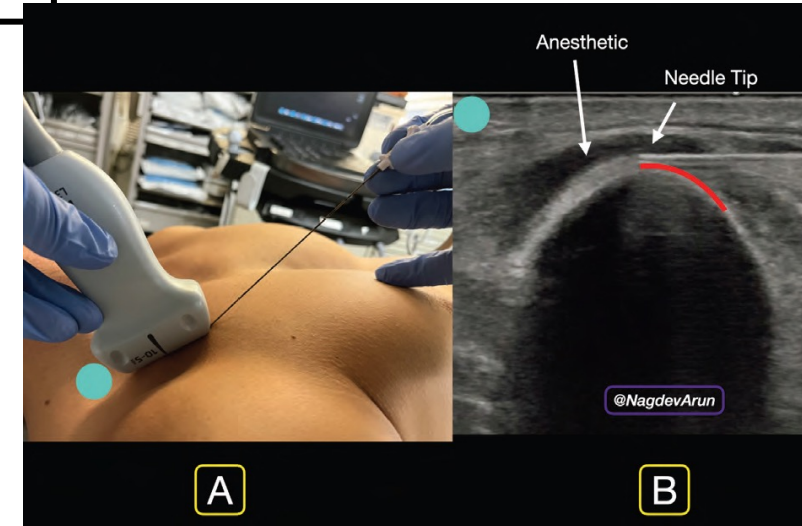
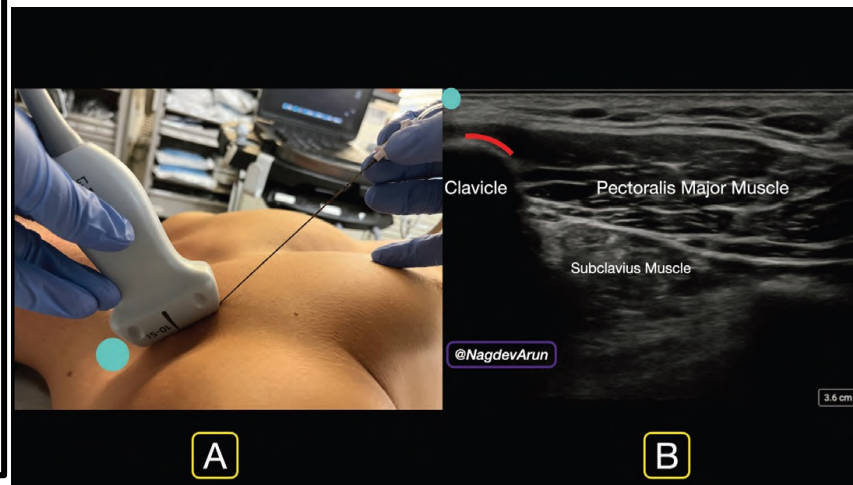
- Pneumothorax
- LAST

INDICATIONS:

- Clavicle Fracture

TARGET TISSUE:

- Clavipectoral fascia, which extends inferiorly from the clavicle, deep to the pectoralis major and superficial to the subclavius muscles. directly blocking the terminal sensory nerve endings that innervate the clavicle.



Special Thanks

- The Many Anesthesia Pioneers Before Us
- Texas Christian University-Greg Collins DNP CRNA
- World Federation of Societies of Anesthesiologists
- Wikipedia Commons