

Ankle Blocks: Anatomy & Placement

Anesthetic Pearls: Anesthetic Implications, Anatomy, and Placement of the Ankle Block

Indication:

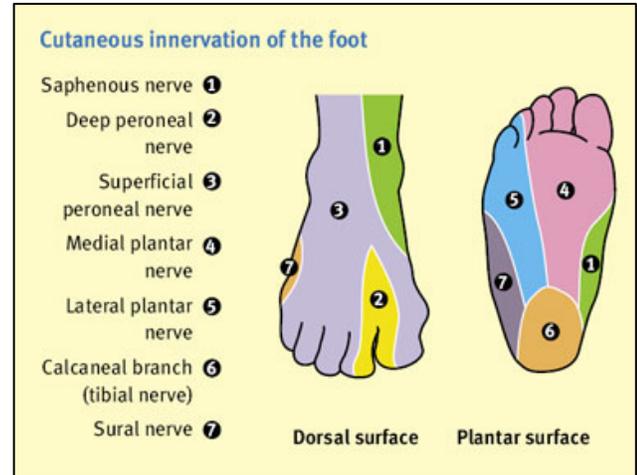
The ankle block is indicated for surgery of the toes and distal foot. However, this block is of **NO** use as primary anesthetic for ankle surgery. The ankle block is especially useful in patients who cannot tolerate the sympathectomy associated with spinal or epidural, or the altered hemodynamics of general anesthesia. In surgeries involving a tourniquet, the ankle block is indicated only for short procedures.

Anatomy:

The two main nerves innervating the lower extremity are the Femoral and Sciatic nerves. There are 5 terminal nerve branches from the Femoral and Sciatic nerves which innervate the foot. All of the terminal branches are derived from the Sciatic except the Saphenous nerve which is the branch of the Femoral. Blockade of these 5 nerve branches constitute the “complete ankle block.”

Procedure:

The ankle block is an infiltration block and does not require a nerve stimulation technique. If paresthesia is elicited, withdrawal slightly before injection. If no paresthesia is elicited, careful fan-wise injection improves the prospect of successfully blocking the specific peripheral nerve. Generally 0.25% to 0.5% Bupivacaine is chosen for the block. Other possible anesthetics include 1% Lidocaine, 1% Mepivacaine, or 0.2% Ropivacaine. Epinephrine is generally avoided in distal extremity blocks.



1. Deep Peroneal Nerve Block

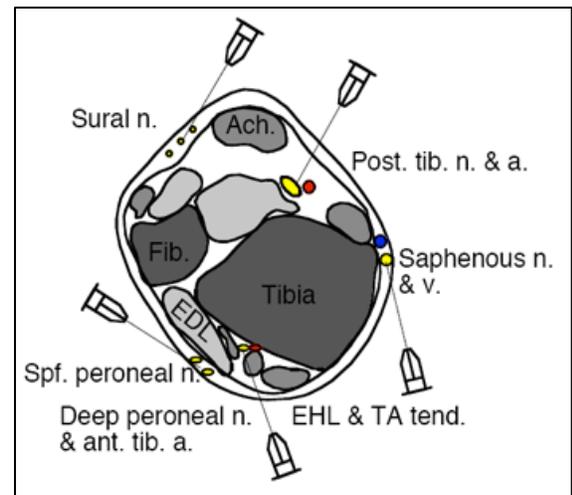
Identify the dorsalis pedis artery and the extensor hallucis longus tendon at the level of the intermalleolar line. A 22 gauge 1.5 inch needle is inserted in the just medial to the tendon to near the periosteum. The nerve is just below this tendon at the depth of the artery and inject 2 cc of local. Alternately, the nerve may be blocked with injection of 2-5 cc local dorsally at the metatarsal level between the great and second toes.

2. Tibial Nerve Block

Palpate the posterior tibial artery located posterior to the medial malleolus. Insert the same size needle just posterior to the artery and aim for the posterior border of the malleolus. Advance until paresthesia or bone and inject 5-10 cc of local.

3. Sural Nerve Block

Locate the space between the lateral malleolus and the Achilles tendon. Inject 5 cc of local anesthesia in a fanwise manner into the subcutaneous tissue.



4 & 5. Superficial Peroneal & Saphenous Nerve Blocks

These two nerves are generally blocked together with a subcutaneous ring of local anesthesia. Starting at the upper anterior portion of the medial malleolus, 10 cc of local anesthesia is injected while advancing laterally to the medial border of the lateral malleolus.

Complications:

Failed block and intra-neural injection with persistent paresthesia are the most common complications. As always, it is wise to have resuscitation equipment nearby whenever performing a regional technique. Also be prepared to convert to general anesthesia if the block fails to provide adequate primary anesthesia.