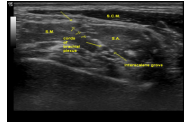


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Posterior tibial nerve block

General difficulty rating: Moderate

Equipment:

- High to medium frequency probe (10-13 MHz) as the nerve is usually 1-1.5cm deep to the skin
- 5-10mls of 1% lignocaine should be sufficient for 1-2 hours anaesthesia
- The use of a 19-21G 5cm needle

Summary of clinical anatomy:

The posterior tibial nerve is a continuation of the tibial nerve. It passes behind the medial malleolus between the posterior tibial artery anteriorly and the flexor hallucis longus tendon posteriorly (see figure 1 and 2). In the foot the nerve divides into three branches (medial calcaneal, medial and lateral planter nerves) which supply the heel and the medial and lateral aspect of the sole of the foot retrospectively.

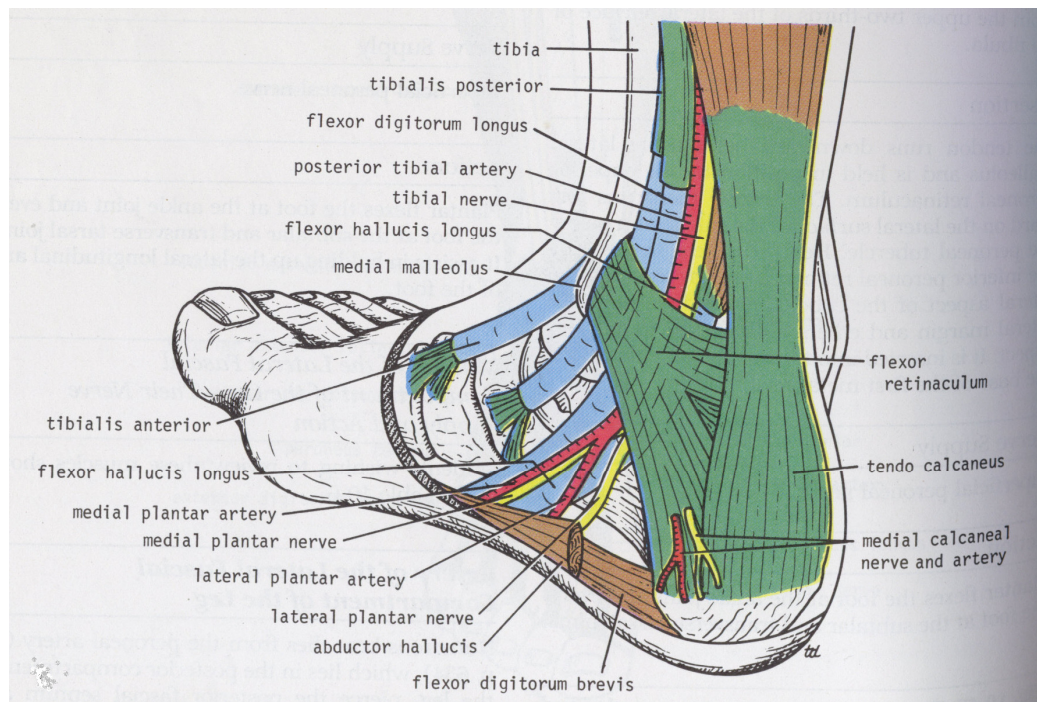


Figure 1 Medial aspect of ankle

Adapted from Snell 'Clinical anatomy for medical students' 3rd edition page 626 figure 10-43

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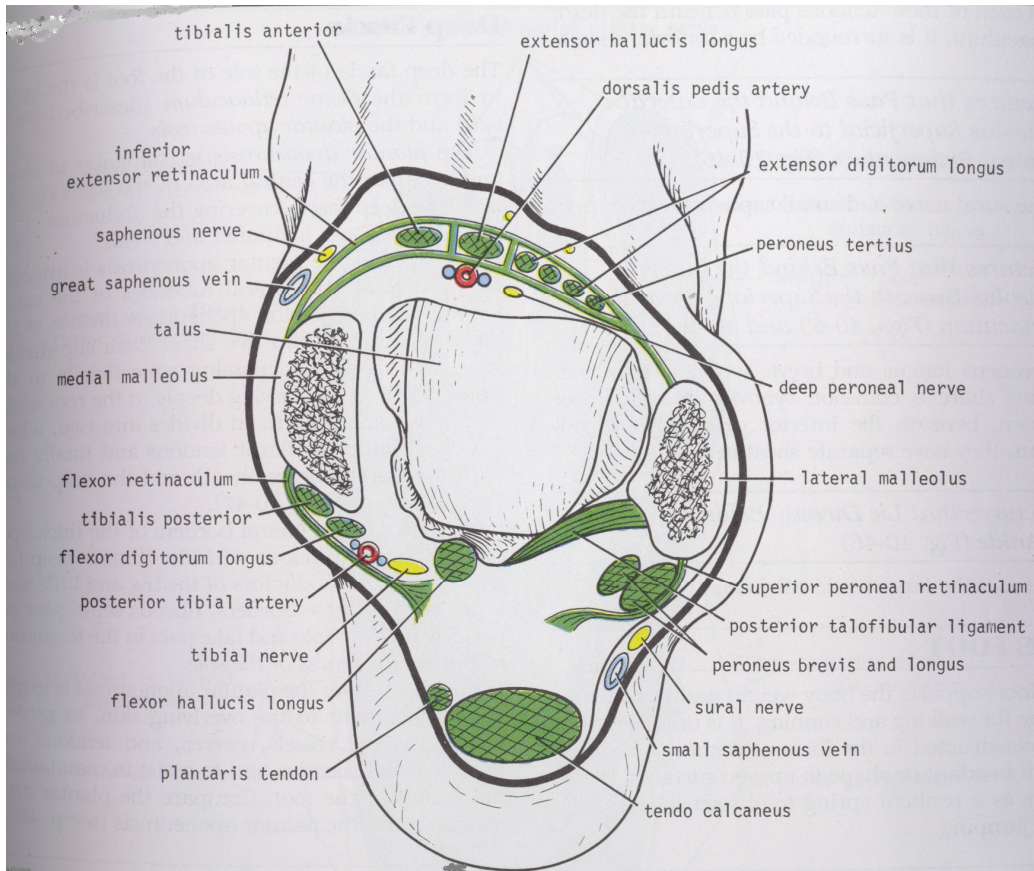
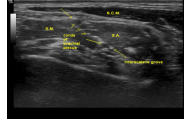


Figure 2 Cross section of ankle joint

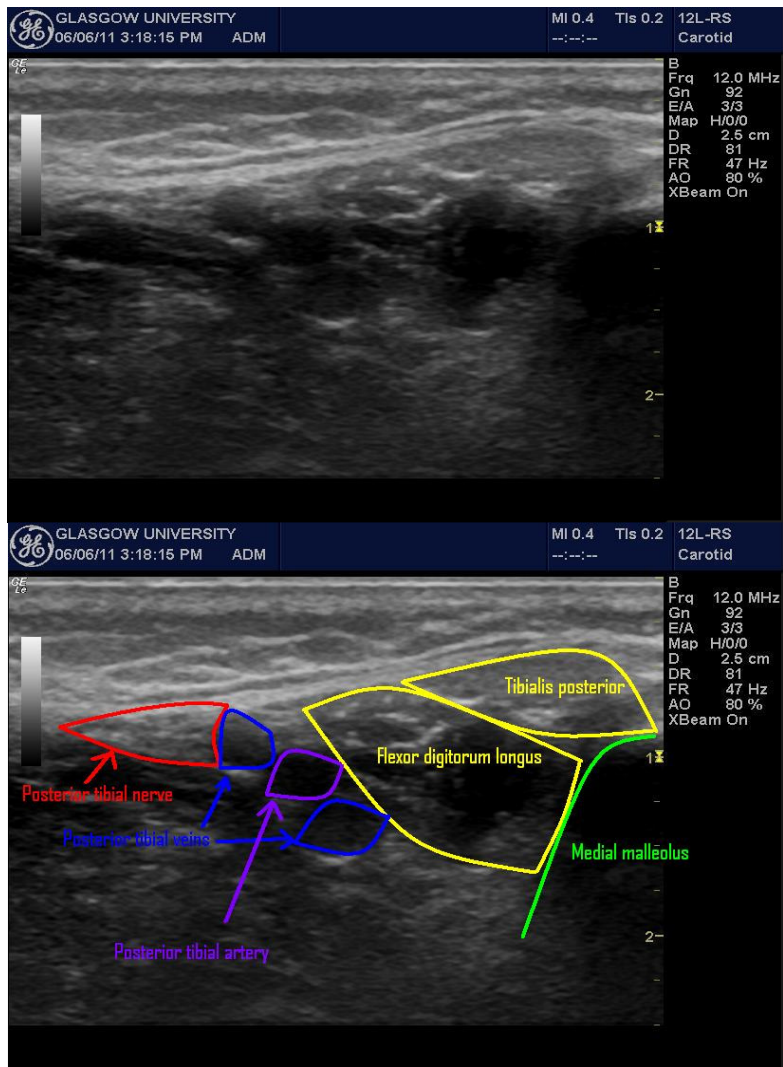
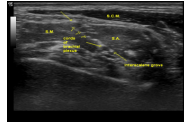
Adapted from Snell 'Clinical anatomy for medical students' 3rd edition page 635 figure 10-46

Method:

- Visualise the posterior tibial artery and vein(s) which usually lie anterior to the nerve in short axis at the level just above the medial malleolus
- Identify and distinguish the posterior tibial artery and vein by compression (veins will compress) and by looking for pulsation (hint: colour doppler may be useful here)
- Look posterior to the posterior tibial artery for a flattened triangular speckled structure.
- Note that the flexor hallucis longus tendon is found posterior to the artery and may be mistaken for the posterior tibial nerve
- The needle can be inserted anteriorly or posteriorly above the medial malleolus and directed in-plane posteriorly towards the nerve.
- Position the needle at 12 o' clock or 6 o'clock position to achieve circumferential spread of local anaesthetic around the posterior tibial nerve

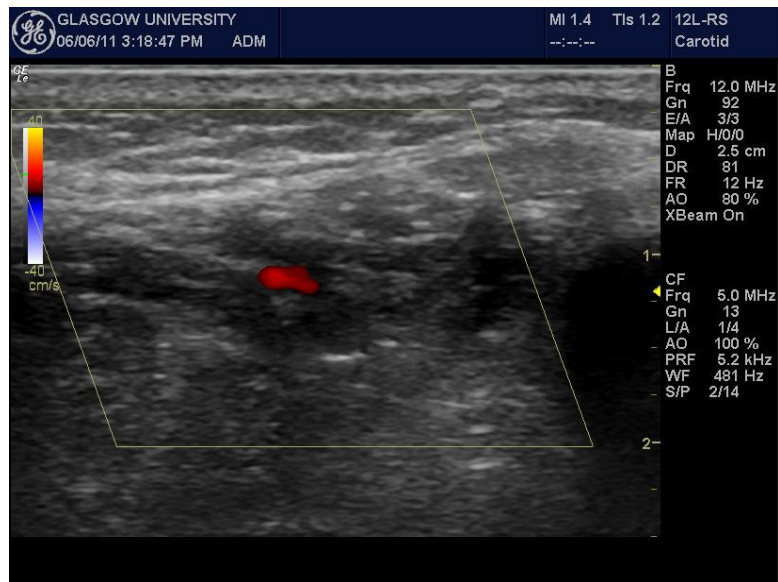
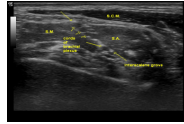
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End points/clinical pearls:

- The volume of local anaesthetic is more important than the concentration
- Use a large syringe (10-20ml) to prevent the generation of high pressures during inadvertent intra-neuronal or intramuscular injection
- Optimise the image of the nerve before starting to block by scanning proximally and distally along the medial aspect of the calf
- Colour doppler may be useful in finding the posterior tibial artery