

## Popliteal Fossa Sciatic Block

The sciatic nerve may be imaged the entire length of its course in the thigh in a good subject. The nerve is most reliably imaged in the popliteal fossa. At this level the nerve is generally rounded, fasciculated and contains a high density of connective tissue which enhances ultrasound reflectivity and anisotropy. With the patient in a lateral position and the limb to be blocked uppermost, the ultrasound probe is placed behind the knee with the beam transverse to the limb. The popliteal artery and vein are identified in short axis and confirmed if needed with colour Doppler.

The sciatic nerve or the posterior tibial branch (a continuation of the sciatic nerve) is found in a position superficial to the popliteal vein and towards the lateral side.

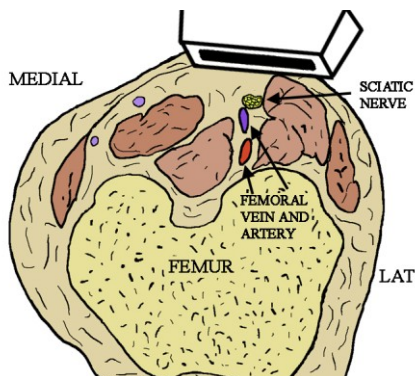


Fig 3.17 Diagram of popliteal fossa showing positions of sciatic nerve and popliteal vessels

The nerve is tracked proximally and distally to identify the division into posterior tibial and common peroneal components. The point of division is best seen scanning dynamically, as the probe is moved the nerves are seen to move apart and together as the common peroneal nerve passes laterally towards the fibula head. The division is usually in the proximal part of the popliteal fossa although sometimes it is more proximal in the thigh. The nerves will in any case be close together and the block technique unchanged.

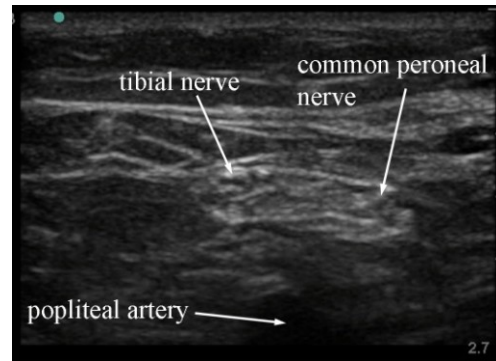


Fig 3.18 Sonogram of popliteal fossa distal to the division of the sciatic nerve

The perpendicular approach to blocking the nerve begins by introducing a 100 mm needle from the lateral side 4 to 5 cm from the ultrasound probe and in line with the beam. The starting distance around the thigh is determined by the depth of the nerve so that the needle approaches the nerve perpendicular to the ultrasound beam.

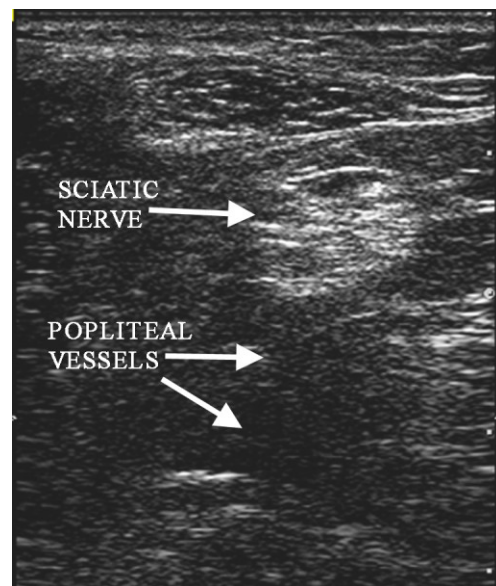


Fig 3.19 Sonogram of the sciatic nerve in the popliteal fossa. Note the well defined and rounded shape typical at this level.

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The needle is positioned both superficial and deep to the nerve to surround it with a total of 10 to 20 ml of 0.75 % to 1% ropivacaine. Block below or at the division of the nerve is possible and may lead to quicker onset time. The high content of connective tissue in the nerve at this level means that this block may come on slowly even if the nerve has been well surrounded by local anaesthetic.

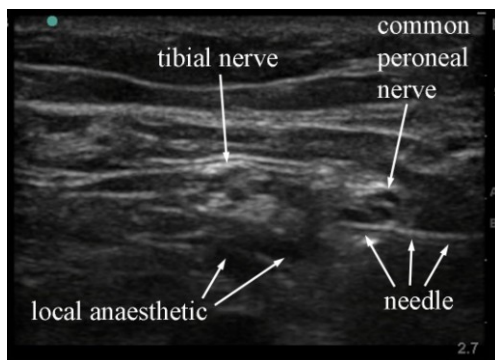


Fig 3.20 commencement of injection of local anaesthetic deep to nerves in popliteal fossa

The tendons of biceps femoris, semimembranosus and semitendinosus may be also seen and need to be distinguished from the nerves

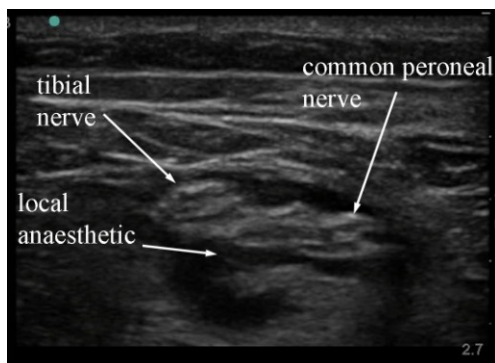


Fig 3.21 conclusion of block in popliteal fossa, both nerves are surrounded by local anaesthetic in this example



Fig 3.22 Needle and probe position for sciatic block in the popliteal fossa. The block may also be performed with the patient supine and the leg supported under the calf to allow the probe into the popliteal fossa, particularly useful for bilateral blocks.

In describing this ultrasound guided procedure it has been assumed that attention has been paid to appropriate location, personnel, sterility, preparation, doses and technique necessary for the safe conduct of major nerve blocks and other procedures. These medical procedures should not be attempted without suitable qualifications

### Acknowledgements

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