REGIONAL ANAESTHETIC TECHNIQUES FOR THE GENERAL PRACTITIONERS

Pages with reference to book, From 302 To 303

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ANKLE BLOCK

1. Anatomy

The nerves of the foot are relatively easy to block at the ankle. Anaesthesia for surgery on the foot requires a combination of blocks to the posterior tibial nerve behind the medial malleolus, the anterior tibial nerve on the anterior aspect of the ankle and the sural nerve behind lateral malleolus. It is feasable to anaesthetise these nerves as they cross the ankle joint.

2. Dorsum of the Foot

The saphcnous and peroneal nerves supply the dorsal aspcct of the foot.

1. The saphenous Nerve

It is the sensory terminal branch of the femoral nerve. It is situated anterior to the medial malleolus running in company with the long saphenous vein.

2. The superficial Peroneal Nerve (Lj, L5, Si, 52)

It perforates the fascia on the anterior aspect of the distal two thirds of the leg, and runs subcutaneously down to the dorsum of the foot. Its superficial branches run subcutaneously over the lateral part of the line joining the medial and lateral malleoli across the dorsum of the foot (Figure 1).

3. The deep Peroneal of Anterior tibial nerve (L4, L5, Si, S2)

It runs down on the anterior aspect of the interosseus membrane of the leg, and lies between the tibialis anterior muscle and the extensor hallucis longus muscle. It lies lateral to the anterior tibial artery and posterior to the flexor retinaculum. It supplies the short extensors of the toe as well as the skin on the lateral side of the big toe and on the medial side of the second toe, i.e., the interdigital cleft between the great and second toe (Figure 1).

2. Equipment

5-10 ml syringe with good quality preferably stainless steel needles with leur lock 21-22 Gauge is usually satisfactory. Preferably needles with blunt points should be used.

3. Local Anaesthetic Solution

For blocking of each nerve. 5-10 ml of 0.5-1% lignocaine with or without adrenaline are required.

4. Indications

Operation on the foot and toes.

In diabetic gangrene of the foot, when local anaesthesia will not interfere with the patient's diabetic regime.

5. Contraindications

In patients suffering from peripheral vascular disease, vasoconstriction agents like adrenaline, should not be used. A complete ring of Local Anaesthetic solution around the limb should be avoided. It is much better to block individual nerve to obtain complete anaesthesia of the foot.

Technique

Blocking the superficial peroneal and saphenous nerve blocks: Draw an imaginary line between the medial and lateral malleolus. Inject 5-10 ml of 0.5-1% lignocaine in the medial and lateral thirds of this line. It is important to aspirate before injecting especially on the medial side as chances of intravenous injection in the long saphenous vein are high (Figure 1).

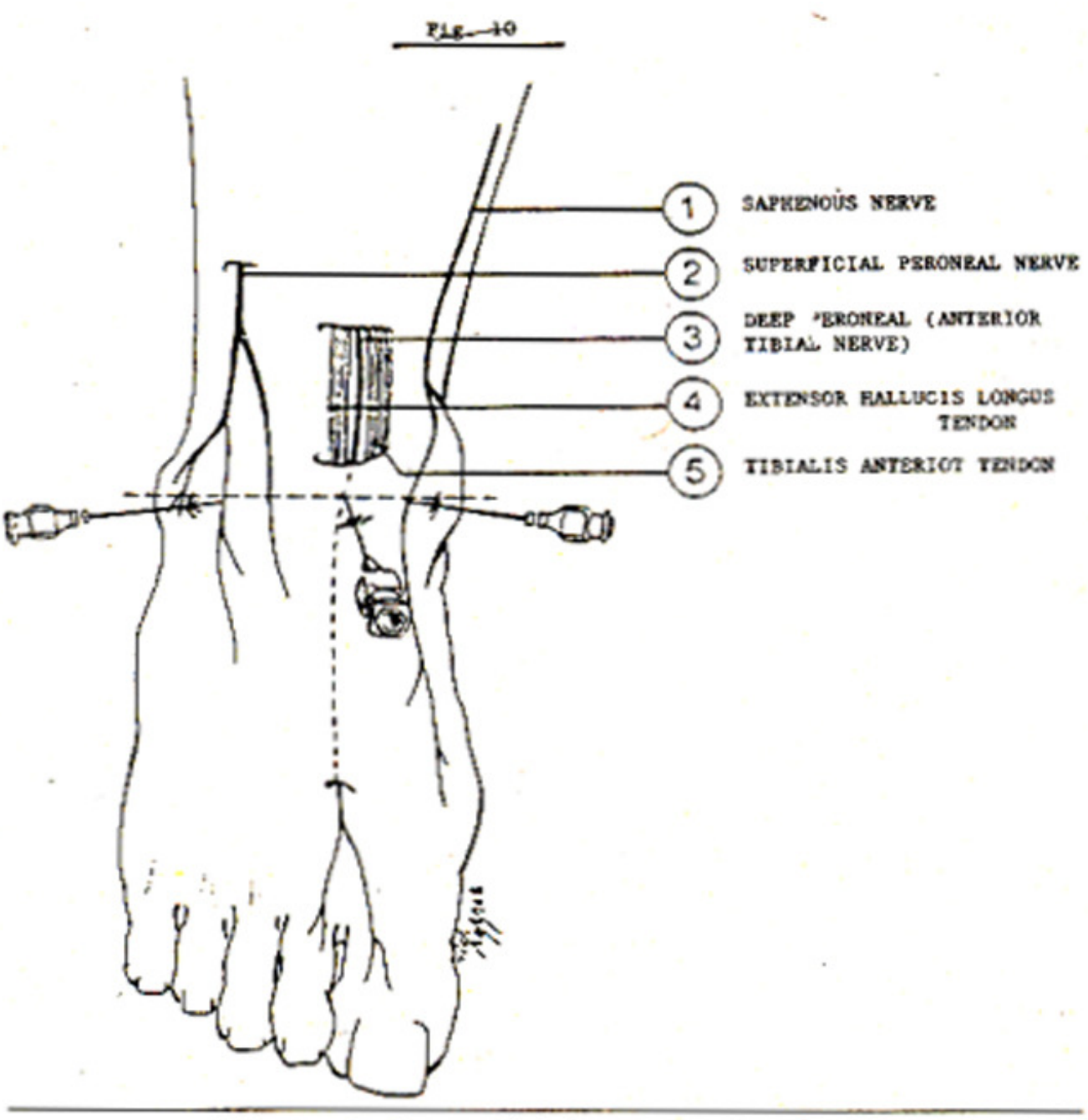

Figure 1. Superficial peroneal nerve.

Block of the deep peroneal nerve

Along the imaginary line - between the medial and lateral malleolus, feel for tendons of the anterior tibialis and extensor hallucis longus muscle. The muscle tendon can be easily palpated if the patient is asks to dorsiflex his/her foot. Insert the needle between the two tendons with the point of the needle towards the tibia. A loss of resistance should be detected as the needle pierces the flexor retinaculum, inject 5 ml of 0.5-1% lignocaine with adrenaline (Figure 1).

PLANTAR SURFACE OF THE FOOT

The sole of the foot is supplied by the posterior tibial nerve and the sural nerve.
The posterior Tibial nerve (L4, L5, Si, S2 and S3)
It is the largest of the two branches of the sciatic nerve and reaches the distal part of the leg from the medial side of the lateral malleolus. Here it lies behind the posterior tibial artery (Figure 2).

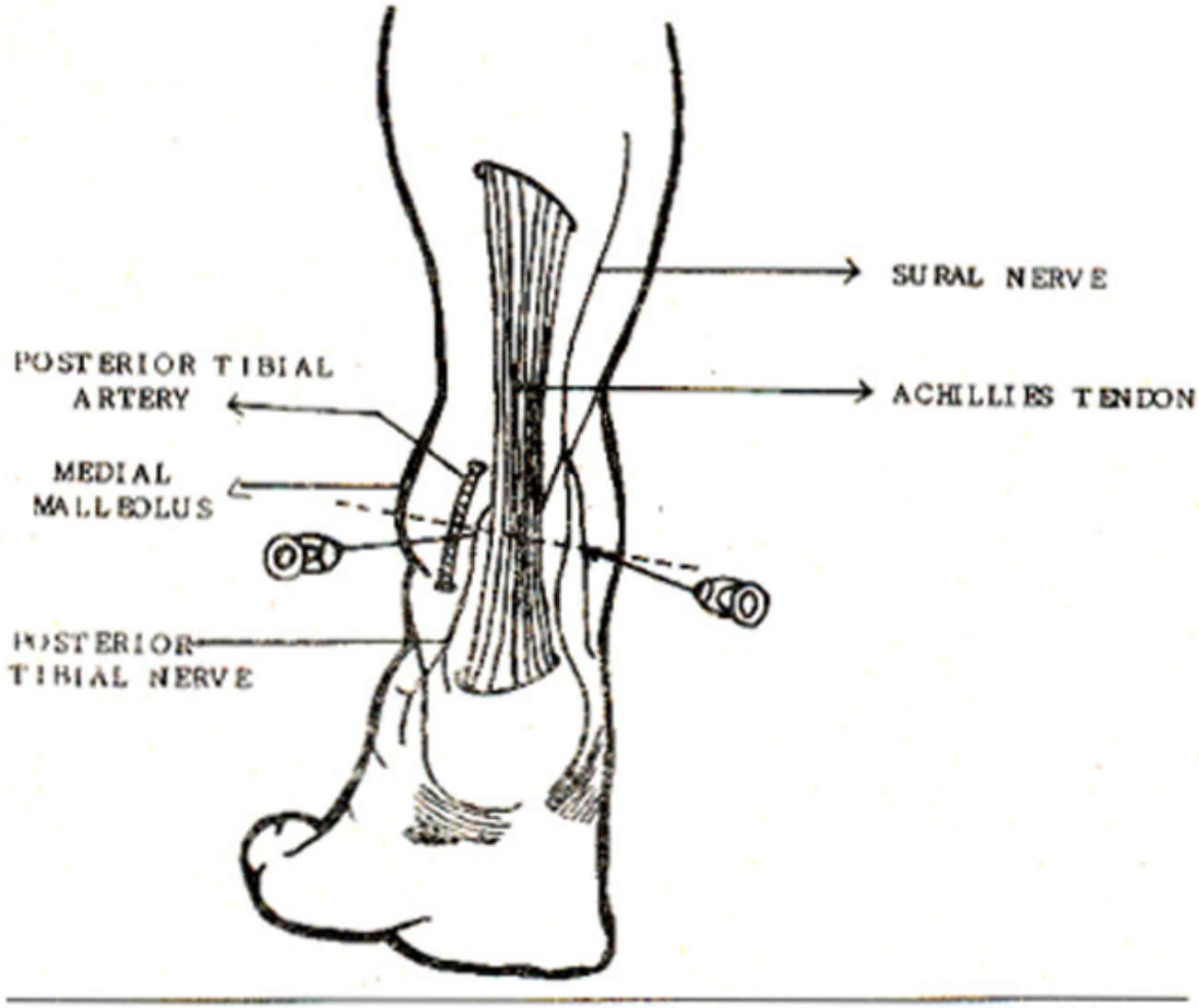

Figure 2. Posterior Tibial nerve.

The Sural Nerve
It becomes subcutaneous a little distal to the middle of the leg and proceeds along the short saphenous vein, behind and below the lateral malleolus, and supplies the outer margin of the foot (Figure 2).
Equipment
5-10 ml syringe with 21 G needle.
Local Anaesthetic Solution.
5-10 ml of 0.5-1% lignocaine with or without adrenaline.
Technique
Posterior Tibial Nerve
The nerve is blocked as it passes behind the medial melleolus. Try and palpate the posterior tibialarterywhichruns between the tendo Achilles and the upper border of the medial malleolus. Insert

the needle at right angles to the tibia and try to place the tip of the needle lateral to the artery. After aspiration inject 5-8 ml of the Local Anaesthetic solution.
If the posterior tibial artery cannot be palpated, then simply inject 10 ml of Local Anaesthetic solution along the posterior aspect of the tibia between the medial malleolus and the tendo Achilles. Onset of anaesthesia can take between 10-30 minutes.
Block of the Sural Nerve
The sural nerve is blocked by infiltrating 5-8 ml of Local Anaesthetic solution between the tendo Achilles and the outer border of the lateral malleolus.