

Can we use "coin sign" image to predict block success after performance of sciatic nerve block?

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To the Editor,

Ultrasound guidance during peripheral nerve block is a revolutionary approach in clinical practice. For a successful block, local anesthetics (LA) should surround the nerve circumferentially. Different definitions have been used to describe the ultrasound image for a successful block. For example, in the infraclavicular area, "U"-shaped LA distribution is suggested, whereas "doughnut sign" is recommended for small peripheral nerves of the body.^[1,2]

In our clinic, we perform sciatic nerve block in the "figure of four (FOF)" position. Gurkan et al.^[3] described the FOF position, according to which the leg

to be examined is flexed and abducted to allow the foot to rest on the ankle of the contralateral leg, as improving the visibility of the sciatic nerve. In the FOF position, when the linear probe is placed at the level of the popliteal crease transversally, the tibial nerve, popliteal vein and popliteal artery can be identified easily (Fig. 1). If we apply pressure with the probe, the popliteal vein collapses. Prior to identification of bifurcation of the distal sciatic nerve, where it lies 5-10 cm proximal to the tibial nerve, the probe is moved further proximally to view the sciatic nerve to be blocked. After the sciatic nerve is viewed, with ultrasound guidance, a 50-80 mm short bevel needle is inserted using in-plane approach. We can administer LA just around the nerve. Circumferential spread of

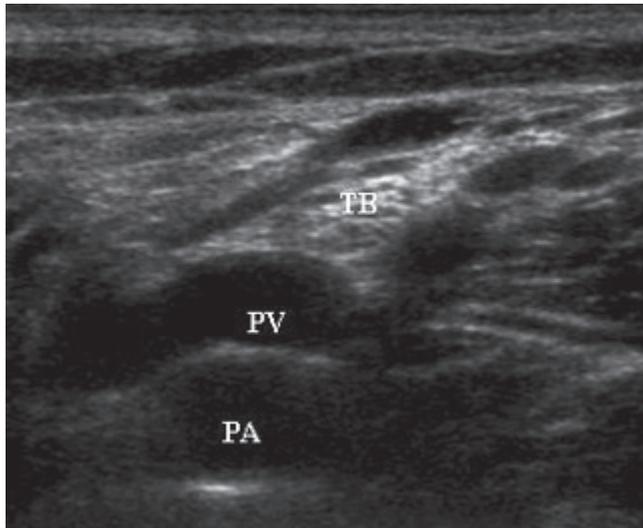


Fig. 1. FOF position. TN: Tibial nerve; PV: Popliteal vein; PA: Popliteal artery.

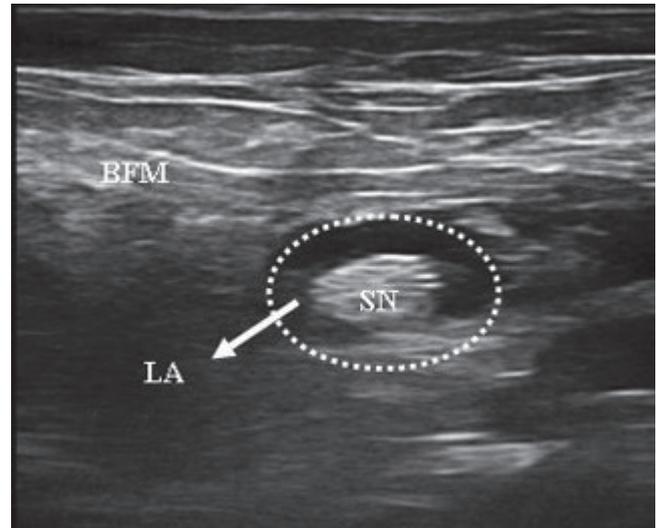


Fig. 2. Coin sign. LA: Local anaesthetic; SN: Sciatic nerve; BFM: Biceps femoris muscle.

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the LA is provided by multiple needle redirections if needed. Because the sciatic nerve is a relatively larger nerve compared to peripheral nerves in other parts of the body, the nerve is seen as a large and round hyperechoic structure. We termed this view as the 'coin sign' (Fig. 2). The 'coin sign' image is composed of the nerve itself and the injected LA surrounding the nerve circumferentially. We conclude that the use of the 'coin sign' would predict block success after performance of sciatic nerve block.

References

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