

Ultrasound-guided peripheral artery cannulation: A priority, not an option

Sir,

Cannulation of peripheral artery for beat-to-beat blood pressure (BP) monitoring, frequent arterial blood gas analysis, and guiding fluid therapy is an indispensable component of intraoperative neurosurgical anaesthesia, especially, for vascular pathologies.^[1] Arteries that are commonly cannulated include the radial artery in the upper limb and the dorsalis pedis artery in the lower limb. The advantages of radial artery cannulation include its superficial location, easy compressibility, distance from important nerves, presence of a collateral supply network, low rate of procedural complications, and unrestricted mobility of the patient.^[2,3] Classically, radial artery cannulation is performed by digital palpation method at the volar aspect of the wrist. However, due to anatomical variations, cannulation by landmark technique may not always be successful.^[4] Ostojić and colleagues reported a frequency of anatomic variations of radial artery as high as 8.8%, exclusive of tortuosities with a frequency of 12.7%.^[5] Moreover, the risk of haematoma formation after puncture cannot be excluded in case of failed cannulation. As the rate of successful cannulation increases significantly by ultrasound technique; it has now become the standard of care.

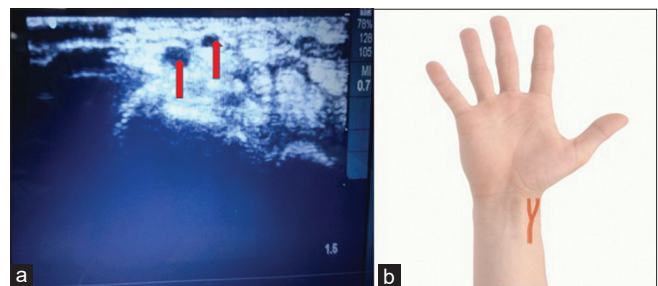


Figure 1: (a) Ultrasound image in short axis showing two pulsating arteries. (b) Pictorial representation of anatomical variation in radial artery

We report a case of a 53-year-old female posted for excision of right frontal meningioma. In the operating room, after induction of general anaesthesia, we planned to cannulate the right radial artery under ultrasound (US) guidance. When we kept the linear probe (7.5 MHz-11 MHz) at the volar aspect of the wrist along the lateral border, we could visualise two pulsating structures in short axis view [Figure 1a]. Upon tracing it proximally, both pulsating structures merged into a single pulsating structure or radial artery which was thereafter successfully cannulated in longitudinal axis with a 22 G arterial cannula [Figure 1b]. This anatomical variation *per se* has not been reported in literature. Through this correspondence, we want to emphasize that due to such anatomical variations, cannulation of radial artery by landmark approach can fail due to multiple reasons. These include being misled by localisation of artery by palpation due to pulsation at two different sites, and branching arteries are narrower than the parent artery. Further, the course of branching arteries may be tortuous leading to

difficult threading of cannula after puncture. Thus, US guided arterial cannulation identifies such anatomical variations easily and at the same time improves the rate of successful cannulation.

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Conflicts of interest

There are no conflicts of interest.

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