

Double Axillary Artery and an Owl Face during an Ultrasound-guided Axillary Brachial Plexus Block

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Dear Editor,

Normally, the nerves arising from the brachial plexus are placed around a single axillary artery (AA) in different positions.^[1,2] At axilla, two arteries can occur in 2.6%^[2] to 9.2%^[1] of population. Double AA in ultrasonographic image has already been described,^[1,2] but in the published images,^[1] the two arteries were neither equal in caliber nor equidistant from the axillary vein (AV). They were described as either larger superficial and smaller deep axillary arteries combination or defined as an accessory artery.^[1,2] The double AA of equal caliber is described only in a cadaver.^[3] We present an ultrasound image of the above-mentioned variant, a double AA and its relation with brachial plexus.

A 64-year-old male presented with degloving injury of the right forearm, multiple abrasions, and a lacerated wound in the right arm and fracture of the right fifth metacarpal bone following a road traffic accident. He was taken up for wound debridement and closed reduction and internal fixation of the fifth metacarpal bone under the right axillary brachial plexus blockade. While the patient was lying supine, his right axilla was exposed with arm 90° abducted, externally rotated, and elbow 90° flexed. Under aseptic precautions, the ultrasound system (Philips HD11XE) L12-3 (broadband linear array probe) was placed in the axilla, perpendicular to the long axis of the arm at the intersection of pectoralis major muscle and biceps brachii. The ultrasound image showed two axillary arteries of equal caliber, equal depth, and equidistance from a single AV at the center. The vein indented due to the mild pressure exerted by the probe which helped to differentiate it from arteries. The brachial plexus was identified by the ultrasonographic appearance as bunch of small round hypoechoic structures. The brachial plexus was seen between the axillary arteries and it was closer to the medial AA [Figure 1]. The nerves arising from the brachial plexus were not seen separately as median,

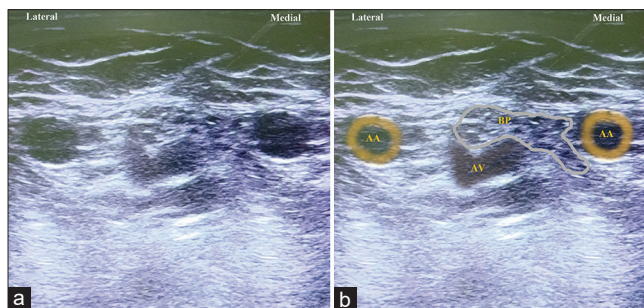


Figure 1: (a) Ultrasound imaging of the axillary region resembling an owl face (b) Labeled image of panel A, double axillary artery of equal caliber, equidistant from the axillary vein. Brachial plexus nerves appeared as a single mass, more toward the medial axillary artery

ulnar, radial, and musculocutaneous nerves, but as a single mass within a single sheath. Apart from this single mass, any other nerve-like structure was absent. It continued as a single mass as we traced 5 cm distally. We could not trace further due to multiple abrasions and laceration in the arm. As there was fracture in the fifth metacarpal bone and muscle tear in the forearm, we did not use nerve stimulation technique as it could worsen the pain. We successfully blocked the brachial plexus using out-of-plane technique with 15 ml of 0.5% bupivacaine placed around that single mass. The motor and sensory distributions corresponding to all four nerves (median, ulnar, radial, and musculocutaneous) were blocked completely and surgery was uneventful. This confirms that the structure identified as a single mass is the brachial plexus included all the four nerves (median, ulnar, radial, and musculocutaneous).

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We were fascinated by the compelling similarity of the ultrasound image with the face of an owl. The axillary arteries resembled the eyes, AV the bill, subcutaneous tissue the supercilium, and brachial plexus nerves the cere of an owl face [Figure 1].

We emphasize the appearance of brachial plexus as a single mass within a single sheath in case of a double AA of equal caliber. This knowledge is important to give a successful brachial plexus blockade at the axilla in this anatomic variant. In such anatomical variations, whenever feasible, usage of nerve stimulation technique along with ultrasonographic appearance would confirm the target nerves before performing the blockade.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient's daughter has given her consent for the patient's images and other clinical information to be reported in the journal. The patient's daughter understands that the patient's name and initials will not be

published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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