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Case Report

Anatomy Section

Superficial Ulnar Artery Associated with Anomalous Origin of the Common Interosseous and Ulnar Recurrent Arteries

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ABSTRACT

Occurrence of vascular variations in the upper limb is not uncommon and is well described in the medical literature. However, occurrence of superficial ulnar artery associated with unusual origin of the common interosseous and ulnar recurrent arteries is seldom reported in the literature. In the present case, we report the anomalous origin of common trunk of common interosseous, anterior and posterior ulnar recurrent arteries from the radial artery, in a male cadaver. Further, ulnar artery had presented superficial course. Knowledge of anomalous arterial pattern in the cubital fossa reported here is clinically important during the angiographic procedures and plastic surgeries.

Keywords: Angiographic procedure, Common interosseous artery, Superficial ulnar artery, Variation

CASE REPORT

During regular dissections for medical undergraduates, we came across the vascular variation in the right cubital fossa. It was observed in a formalin embalmed 55-year-old male cadaver. Brachial artery terminated into radial and ulnar arteries at the level of the neck of the radius. Ulnar artery presented a superficial course in the forearm. After origin, it ran superficial to the pronator teres, palmaris longus, flexor digitorum superficialis and flexor carpi radialis. Radial artery had a usual course in the forearm. A common trunk of common interosseous artery (CIA), anterior and posterior ulnar recurrent arteries arose from the ulnar side of the radial artery about 2 cm below the point of the termination of the brachial artery. Radial recurrent artery arose from the back of the radial artery [Table/Fig-1,2].

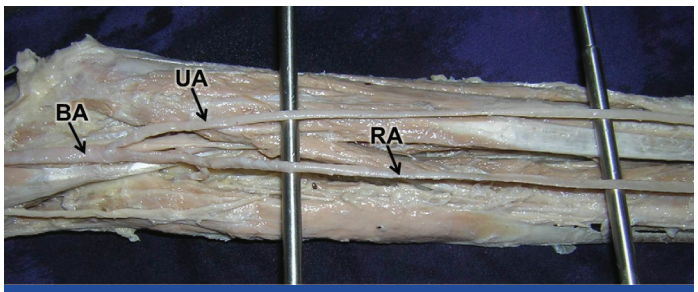
DISCUSSION

Superficial ulnar artery (SUA) is the commonly reported variation wherein ulnar artery takes origin either from the axillay artery or from the brachial artery above the level of cubital fossa [1]. The incidence of SUA is found to be 0.7% to 7% [1]. Dartnell et al., have observed the SUA in 4.2% of cases [2]. SUA may supplement the normal ulnar artery or it may completely replace the normal ulnar artery [3]. Mannan et al., [3] have reported a rare case of SUA joining the normal ulnar artery near the wrist. SUA usually course superficial to the flexor muscles of the forearm when it takes higher-up origin [4]. Contrary to previous reports, in our case ulnar artery followed a superficial course even though it took origin at normal level. Babu has reported a similar pattern of the ulnar artery [5].

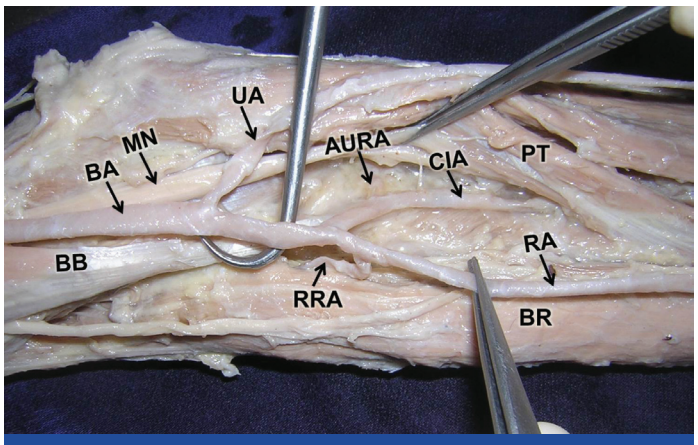
The CIA, anterior ulnar recurrent artery and posterior ulnar recurrent artery usually arises from the ulnar artery, in the cubital fossa. CIA may arise from axillary artery or brachial artery [6]. High origin of radial artery and CIA has been reported [7]. Cherian et al., have observed a case of origin of CIA from the brachial artery [6]. Origin of anterior and posterior ulnar recurrent arteries from the brachial artery separately or by a common trunk has been reported [8]. Babu has reported a case origin of the common trunk of CIA, anterior and posterior ulnar recurrent arteries from the radial artery. Similar finding has been observed in the present case [5].

Vascular anomalies of the upper limb could be explained based on the embryonic development. Rodriguez et al., have demonstrated that the variations of upper limb arteries develop due to persistence, enlargement and differentiation of parts of the initial network which would usually persist as capillaries or disappears by regression [9].

The vascular variations reported in the present case are clinically important while performing the angiographic procedures. The



[Table/Fig-1]: Dissection of the right cubital fossa showing the termination of brachial artery (BA) into ulnar artery (UA) and radial artery (RA). Note the superficial course of the UA



[Table/Fig-2]: Closer view of the dissection of the right cubital fossa showing the termination of brachial artery (BA). (UA: ulnar artery; RA: radial artery; RRA: recurrent radial artery; MN: median nerve; CIA: common interosseous artery; AURA: anterior ulnar recurrent artery; BR: brachioradialis; BB: biceps brachii; PT: pronator teres)

knowledge of the unusual origin of the interosseous and ulnar recurrent arteries from the radial artery may be important while raising a free radial forearm flap [1].

CONCLUSION

Hence, anomalous origin of common trunk of common interosseous, anterior and posterior ulnar recurrent arteries from the radial artery with ulnar artery presenting a superficial course as reported here is clinically important during the angiographic procedures and plastic surgeries.

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