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## AXILLOPALMAR ARTERY- AN ANAMOLOUS EXISTENCE OF AN ARTERY REPLACING SUPERFICIAL PALMAR ARCH WITH REGRESSION OF ULNAR ARTERY- A CASE REPORT

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### ABSTRACT

Since human dissection started Vascular variations have always been recorded in origin, course, length, and branching pattern by researchers all across the world which is a subject of controversy and curiosity because of its clinical significance. Interesting vascular variations of upper limb have long received attention of Anatomists, Surgeons and Radiologists. The existence of an anomalous artery in upper limb was encountered during routine dissection for medical undergraduate students. In current case, there was regression of ulnar artery along with absence of superficial palmar arch which was counteracted by a long artery arising from Axillary artery. The occurrence of this interesting variation with reference to origin, course, relations, clinical importance and embryological facts will be discussed during presentation.

**Keywords:** Axillopalmar artery, Ulnar artery, Superficial Palmar arch, Vascular variation.

### INTRODUCTION

Vascular variations have been recorded regarding origin, course, and length & branching pattern by researchers all across the world which is a subject of controversy & curiosity because of its clinical significance. Interesting vascular variations of upper limb have long received attention of anatomists, Surgeons & Radiologists. Axillary artery is the direct continuation of the subclavian artery at the level of outer border of the first rib. The course of the Axillary artery is anatomically divided into three parts by the pectoralis minor muscle. The first part of the artery gives off superior thoracic artery, second part gives off lateral thoracic and thoracoacromial branch and Sub scapular artery, Anterior and Posterior Circumflex humeral artery arise from the third part. Normally, the ulnar artery begins distal to the bend of the elbow as the larger of the two terminal divisions of the brachial artery. The term Axillopalmar artery is applied to an artery

which arises from the axillary artery and courses over the origins of the superficial forearm muscles to join at the mid level of the forearm with the ulnar artery. The Axillopalmar artery has been reported with different terminologies: arteria antebrachialis superficialis ulnaris, high origin of the ulnar artery and superficial ulnar artery with a high origin.

### OBSERVATION

During routine anatomy dissection classes for medical undergraduates at MRA Medical College Ambedkarnagar, U.P, we found an anomalous artery arising from second part of axillary artery in axilla of approximately 70 year-old male cadaver. The course, relation of the anomalous artery was studied carefully. The anomalous artery descended along the arm superficial and medial to the median nerve and it gave muscular branch to the biceps brachii. At the elbow the artery passed superficial to the bicipital

aponeurosis and proximal to elbow the artery was subjacent to the median cubital vein. After that, the artery coursed obliquely downwards and medially, superficial to the forearm flexor muscles and in distal part of the forearm it laid between flexor carpi ulnaris and flexor digitorum superficialis muscles. The artery then passed superficial to the flexor retinaculum and lateral to the ulnar nerve, where it divided into two terminal branches to supply the palm and fingers, superficial palmar arch as such was not observed. The brachial artery had a normal course in the arm but it divided into the radial and ulnar arteries at the upper angle of cubital fossa, and the radial artery was of larger caliber instead of ulnar artery. The ulnar artery gave off common interosseous branch and after a short course post.introsseeous artery arose, the main trunk coursed down as ant introsseos artery which after supplying the muscles of flexor compartment underwent regression in the lower part of the forearm. The arterial course & branching pattern was normal on the opposite side.

## DISCUSSION

Saeed *et al.* (2002) reported a bilateral common subscapular-circumflex humeral trunk (3.8%) emerging from the 3<sup>rd</sup> part of the axillary artery (branching into the circumflex humeral and thoracodorsal arteries).

Vijaya Bhaskar *et.al* (2006) reported a case of bifurcation of axillary artery into Superficial & Deep Brachial arteries. Deep brachial artery gave origin to Anterior & Posterior circumflex humeral, Subscapular and Profunda brachii arteries. Reported incidence of this anomalous branching is 0.12 – 3.2 %.

Sharadhkumar *et. al.*(2012)reported a unusual large branch from the brachial artery was variant of ulnar artery descends on lateral side of arm up to cuboidal fossa and cross the fossa from lateral to medial and superficial to median nerve,then superficial to muscle of flexor compartment of forearm then cross the flexor retinaculum.

Thejodhar pulakanta *et.al* (2009) reported that SUA arising from the 3<sup>rd</sup> part of rt.axillary artery at the junction of two median nerve roots then SUA crosses over the flexor retinaculum and normal ulnar artery was absent.

Mitesh R DAVE *et. al.* (2012) also reported a variant ulnar artery originated from the second part of axillary artery just above the two roots of median nerve. Alnar artery was a smaller caliber and it coursed superficially over the flexors of the forearm.

Venkata Ramana Vollala *et. al* (2011) reported that The ulnar artery arose from the brachial artery in the middle third of the arm . At the elbow level, the artery ran superficial to the bicipital aponeurosis where it was crossed by the median cubital vein.

## CONCLUSION

Accurate knowledge of the normal and variant arterial pattern of the upper limb is important both for reparative surgery and for angiography as upper limb arteries have been used for coronary bypass and flaps in reconstructive surgery Yoshinaga *et al.* (2006). It is especially relevant in cases of arteriovenous fistulae, aneurysms and abscess drainage in region of axilla, arm and cubital fossa (Taub *et al.*, 1999). Clinical implications of such variations have to be kept in mind during anaesthetic procedures of brachial plexus, shoulder arthroscopy, traumatic injuries involving axillary region. (Ramesh *et al.*, 2008)

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**Figure: 1 Showing origin of anomalous artery from second part of axillary artery.**



**Figure: 2 Showing course of anomalous artery origin from second part of axillary artery.**



**Figure: 3** Showing course of anomalous artery in cubital fossa and forearm.



**Figure: 4** Showing terminal branches of anomalous artery origin from second part of axillary artery.