

## A Rare Anomalies in the Branching Pattern of Axillary Artery - Case Report

**Muthuvel Mani\***

Asia Metropolitan University, Malaysia

\*Corresponding Author: Muthuvel Mani, Asia Metropolitan University, Malaysia.

Received: September 26, 2020; Published: November 07, 2020

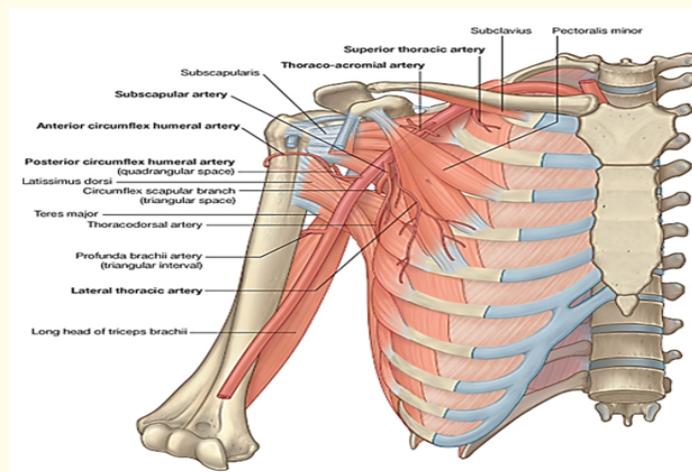
### Abstract

Normally Axillary Artery gives only one branch from the first part, which is superior thoracic artery; two branches from its second part, they are thoraco-acromial and lateral thoracic arteries and three branches from the third part, they are subscapular, anterior and posterior circumflex humeral arteries accordingly. In one of the case there was two branches from its first part both are muscular branches and second part given four branches, two branches are the usual thoraco-acromial and lateral thoracic arteries and the other two are articular branch to the shoulder joint and Third part given only two branches, one is usual subscapular artery and the other branch is divided in to two branches which are anterior and posterior circumflex humeral arteries. These types of anatomical variation assumes clinical significance during the surgical procedures around axilla and the shoulder region.

**Keywords:** Anomalies; Branching Pattern; Axillary Artery

### Introduction

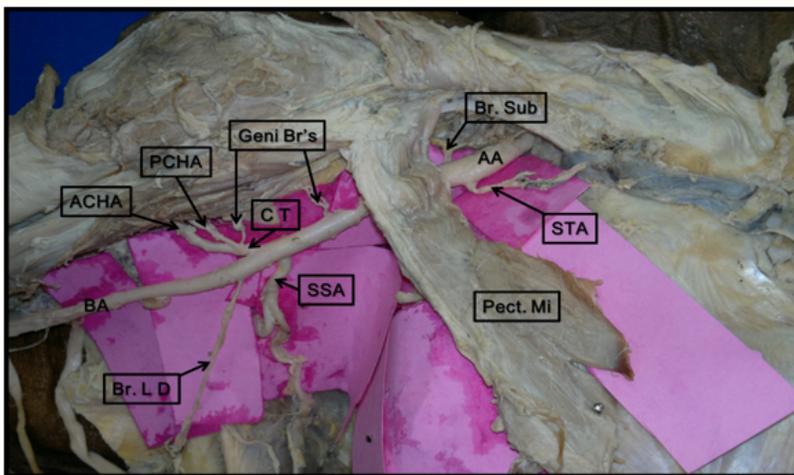
Normally the axillary artery begins at the outer border of first rib as a continuation of subclavian artery and continues as the brachial artery beyond the lower border of teres major muscle. The artery is classically divided into three parts by the pectoralis minor muscle. The artery usually gives one branch from its first part the superior thoracic artery, two branches from the second part are thoraco-acromial and lateral thoracic arteries and three branches from its third part i.e. subscapular, anterior and posterior circumflex humeral arteries. Though these are normal, many studies were indicated a high degree of variation in the branching patterns of axillary artery [1-9].



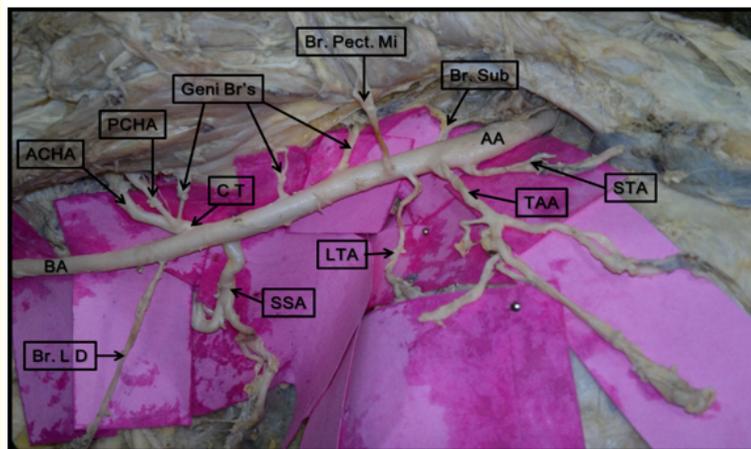
**Figure 1:** Normal anatomy of axillary artery and its branching patterns.

**Observation**

During our routine dissection for the undergraduates, in Amala Institute of Medical Sciences, Amala Nagar, we encountered an anatomical variation in the branching pattern of right axillary artery as mentioned below in a 68 years old female cadaver. The first part gives two branch, which are superior thoracic artery (STA) and muscular branch to subclavius (Br. Sub). The second part gives five branches, two is usual lateral thoracic (LTA) and thoraco-acromial arteries (TAA) and third is a muscular branch to pectoralis minor (Br. Pect. Mi.) and two genicular branch to the shoulder joint (Geni. Br's). Third part gives three branches, first is usual subscapular artery (SSA), second is muscular branch to latissimus dorsi (Br. LD) and third is common circumflex humeral artery (CT) which further divided into anterior (ACHA) and posterior circumflex arteries (PCHA) and a genicular branch (Geni. Br's) to shoulder joint.



*Figure 2: Anomalies in the axillary artery with pectoralis minor.*



*Figure 3: Anomalies in the axillary artery without pectoralis minor.*

## Discussion

The anomalies in the Axillary artery which regards to origin, course and branching patterns are infrequent. During embryogenesis of the lateral branch of seventh cervical intersegmental artery become enlarged to form the axial artery of upper limb which are on its further development it becomes axillary, brachial, radial, and ulnar arteries consequently. These arterial anomalies in the upper limb arteries are due to the defects in the embryonic development of the vascular plexus in the upper limb bud. This may be due to the arrest at any stage of its development, which showing regression, retention, reappearance and or may lead to variation in the arterial origins and courses of the major upper limb blood vessels. As per previous studies the axillary artery gave rise to some unusual branches like thoracodorso-subscapular trunk, which also gave rise to the posterior circumflex humeral artery [10]. One of the study shows that presence of a bilateral common subscapular-circumflex humeral trunk from the third part and presence of a bilateral thoraco - humeral trunk arising from second part of axillary artery [which further branched into the lateral thoracic, circumflex humeral, subscapular and thoracodorsal arteries] has been reported [11].

However, the present right side variation with multiple branches from each parts of the artery is not reported so far [Two branches from first part, five branches from second part and two branches and a common circumflex humeral artery from third part].

## Conclusion

The anomalies in the origins and courses of principal arteries are of clinical importance to the vascular radiologists and vascular surgeons. In axillary approach to correct the chronic dislocation of shoulder joints the incision is travels and which may injure the axillary artery or branches of the axillary artery. During surgery the normal branch may be a definite cause of concern if its presence is not kept in mind. Therefore, both the normal and abnormal anatomy of the region should be well known for accurate diagnostic interpretation and therapeutic intervention.

## Bibliography

1. Williams PL, et al. "Gray's anatomy, 39<sup>th</sup> Edition". Edinburgh: Churchill Livingstone (1989): 844-845.
2. McCormack LJ, et al. "Brachial and antebrachial arterial patterns". *Surgery, Gynecology and Obstetrics* 96 (1953): 43-54.
3. Huelke DF. "Variation in the origins of the branches of the axillary artery". *The Anatomical Record* 35 (1959): 33-41.
4. De Garis CF and Swartley WB. "The axillary artery in white and Negro stocks". *American Journal of Anatomy* 41 (1928): 353.
5. Jurjus A, et al. "Unusual variation of the arterial pattern of the human upper limb". *The Anatomical Record* 215 (1986): 82-83.
6. Trotter M, et al. "The origins of branches of the axillary artery in whites and in American Negroes". *The Anatomical Record* 46 (1930): 133-137.
7. Tan CB and Tan CK. "An unusual course and relations of the human axillary artery". *Singapore Medical Journal* 35 (1994): 263-264.
8. Jurjus AR, et al. "Bilateral double axillary artery: embryological basis and clinical implications". *Clinical Anatomy* 12 (1999): 135-140.
9. Uglietta JP and Kadyr S. "Arteriographic study of variant arterial anatomy of the upper extremities". *CardioVascular and Interventional Radiology* 12 (1989): 145-148.
10. Lengele B and Dhem A. "Unusual variations of the vasculonervous elements of the human axilla. Report of three cases". *Anatomia Histologia Embryologia* 72 (1989): 57-67.
11. Saeed M, et al. "Variations in the subclavian - axillary arterial system" 23.2 (2002): 206-212.

**Volume 3 Issue 12 December 2020**

**©All rights reserved by Muthuvel Mani.**