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THE MORPHOLOGICAL VARIATION OF BRANCHING PATTERN OF AXILLARY ARTERY

Anatomy

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ABSTRACT

INTRODUCTION: The aim of this study is to reveal the variations of branching pattern of axillary artery.
METHODS: The variation of branching pattern of axillary artery were determined unilaterally in 22 formalin-fixed cadavers (18male and 4 female) in the Department of anatomy.
RESULTS: subscapular, circumflex humeral, profundabrachii arteries arise in common trunk and branches of brachial plexus surrounds this common vessels instead of the 3rd part of axillary artery one cadaver out of twenty two.
CONCLUSION: The awareness of variations in the anatomy of axillary artery and its branches is important to ovoid serious complications while treating the arteriovenous fistula, aneurysms and abscess drainage in the region of axilla.

KEYWORDS

Axillary Artery, Profundabrachi Artery, Brachial Plexus.

INTRODUCTION:

Axillary artery is a continuation of subclavian artery,extends from outer border of first rib up to lower border of teres major muscle where it continuous as brachial artery. Through it course, the artery is accompany the inferomedially by the axillary vein. First and second part of axillay artery closely related to the cords of brachial plexus and third part related to the branches of brachial plexus.

Axillary artery subdivided into three parts by the pectoralis minor muscle first part gives of one branch (superior thoracic artery),second part gives of two branches (thoracoacromial artery, lateral thoracic artery),third part gives of three branches(subscapular artery, anterior circumflexhumoral artery,posterior circumflex humoral artery). In this study, we aimed to determine the variations of branching pattern of axillary artery and its relation with important anatomical structure.

MATIRIALS AND METHODS:

SAMPLE SIZE:

22 upper limbs were procured from the Department of Anatomy during the course of study over a period of two years.

INCLUSION CRITERIA:

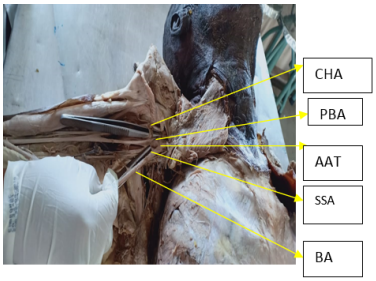
All the cadavers available during study period were included.

EXCLUSION CRITERIA:

Deformed or traumatized upper extremities were excluded from the study.

DISSECTION METHOD:

This study investigated 22 unilateral limbs from 22 cadavers (18males &4females) dissected to study the variations of branching pattern of axillary artery. With the limb on its back, two transverse incisions were made, first at the level of anterior axillary fold, second at the cubital fossa. A vertical incision connecting the midpoints of these lines was taken. Then skin and superficialfascia were reflected.



VARIATION OF AXILLARY ARTERY:

CHA:circumflex humoral artery,
PBA:profunda brachii artery,
AAT:axillary artery trunk,
CSA:sub scapular artey,
BA:brachial artery.

VARIATION OF AXILLARY ARTERY:

subscapular,circumflex humeral,profunda brachii artery arise in common trunk and branches of brachial plexus surrounds this common vessels instead of the 3rd part of axillary artery one cadaver out of twenty two

RESULTS:

The present study comprises 22 unilateral upper limbs from 22cadavers (18males & 4females) dissected to investigate the variation of branching pattern of axillary artery. The subscapular artery,circumflex humeral artery usually arouse from third part of axillary artery and profunda brachial artery originate from brachial artery posteromedial aspect,distal to teres major muscle .In my study subscapular ,circumflexhumeral, profunda brachi arouse from common axillary artery trunk in 4.5%. in this case branches of brachial plexus surround this common vessel instead of 3rd part of axillary artery. In few studies subscapular artery arouse from common trunk with the posterior circumflex humeral artery in 30%.

DISCUSSION:

The result of the present study demonstrate the variation of branching pattern of axillary artery .variation of axillary artery may be due to the defects in embryonic vascular network occurred at any stage by the arrest of development.The developmental defects of surrounding tissue may also lead to vascular variations. Variations in branching pattern of axillary artery should be kept in mind while performing bypass between the axillary and subclavian artery in surgical treatment of subclavian artery occlusion. The common trunk as in the present study can be used for bypass surgery . Aneurysm and trauma of axillary artery may require reconstructive operation and variations as in the present case may present difficulties in the procedure. Repetitive positional compression of the axillary artery in athletes can cause focal intimal hyperplasia, aneurysm formation, segmental dissection, and branch vessel aneurysms. These conditions favour thrombosis and distal embolism and may need positional arteriography for diagnosis. The axillary arteries have been successfully used as the cannulation site in cardiopulmonary bypass, thoracic and aortic procedures, for insertion of intra-aortic balloon pumps and it is under consideration for use as an inflow vessel in coronary artery surgery. Variant common

trunks from axillary artery can be considered for cannulation. Radio logical studies can thus be performed before proceeding to the above mentioned procedures.

CONCLUSION:

The awareness of variations in the anatomy of axillary artery and its branches is importent to ovoid serious complications while treating the arterio venous fistula, aneurysms and abscess drainage in the region of axilla. Better anatomical knowledge about the branches of axillary artery and their variation are importent for surgions, physicians, radiologist, interventionist because based on anatomical study, new diagnostic and therapeutic approaches can be proposed.

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