

Variation in the origin of branches of axillary artery- A case report

Jain SR, Kulkarni PR, Baig MM

ABSTRACT

Axillary artery divides into three parts by pectoralis minor muscle and classically each part has its own branches. There are many reports to show different variations in the branching pattern of axillary artery. We report a case in which lateral thoracic artery arose from common subscapular trunk deep to pectoralis minor muscle. This subscapular trunk also gave circumflex scapular, thoracodorsal and posterior circumflex humeral arteries. Anterior circumflex humeral artery arose from third part of axillary artery as separate branch. Since axillary artery has the high rate of rupture and damage, awareness of such abnormal axillary vasculature is crucial for surgeons, radiologist and anatomist.

Keywords: axillary artery, subscapular trunk, lateral thoracic artery

INTRODUCTION

The axillary artery begins at the outer border of the first rib as a continuation of the subclavian artery and ends at the lower border of the teres major muscle. It is classically divided into three parts by the pectoralis minor. There is an extensive collateral circulation associated with the subclavian and axillary arteries, particularly around the scapula. Branches emerging from axillary artery supply the thoracic wall and the shoulder region. From the first part arises superior thoracic artery; from second part, the thoracoacromial artery and lateral thoracic artery; and the third part gives rise to subscapular, anterior and posterior circumflex humeral arteries.

Sometimes, many of these branches originate from a common stem or arise separately.¹ There are many reports to show different variations in the branching pattern of axillary artery.¹⁻⁵ Since axillary artery has the high rate of rupture and damage, awareness of such abnormal axillary vasculature is crucial for surgeons, radiologist and anatomist.^{3,5} In the present case report we have discussed a variation in the branching pattern of axillary artery.

CASE REPORT

During anatomic dissection, a unilateral variation in branching pattern of axillary artery in left axilla of a female cadaver was noticed. The course, relation

and branching pattern of the right axillary artery was normal.

The axillary artery of the left side had normal course and relations in the axilla, and from the first part, superior thoracic artery originated. Out of the two branches that should have originated from the second part, only the thoracoacromial artery was seen emerging. About 4cm from the origin of second part, there was a large common trunk from which originated the lateral thoracic artery running towards lateral thoracic wall across the axilla; and the subscapular artery which further divided into posterior circumflex humeral artery, thoracodorsal artery and circumflex scapular artery. Anterior circumflex humeral artery arose from third part of axillary artery as separate branch.

Posterior circumflex humeral artery was accompanied by the axillary nerve before entering to quadrangular space. Circumflex scapular artery had very short course before it disappears through triangular space. Thoracodorsal artery had its normal course along with thoracodorsal nerve.

DISCUSSION

Variations in branches of axillary artery have been reported, and so also the number of branches that arises from the different parts of it.¹⁻⁵ Translocations of branches in second and third parts of axillary have also been described.¹

Normally, during the early organogenesis phase in

embryos, the seventh cervical intersegmental artery enlarges and becomes the dominant vessel of axilla. The C6, C7 and T1 segmental arteries and most of the longitudinal anastomoses that link up the intersegmental arteries degenerate slowly. These numerous alternatives that exist during the formation of upper limb vessels seem to be responsible for anomalous arterial branching patterns.

Presence of such variation, a large common trunk as a branch of third part of axillary artery is worth considering during micro vascular graft to replace the damaged arteries, radical mastectomy operations, reconstruction of axillary artery after trauma, analyzing axillary region using imaging system or ultrasonography, treating axillary artery thrombosis etc.^{3,5}

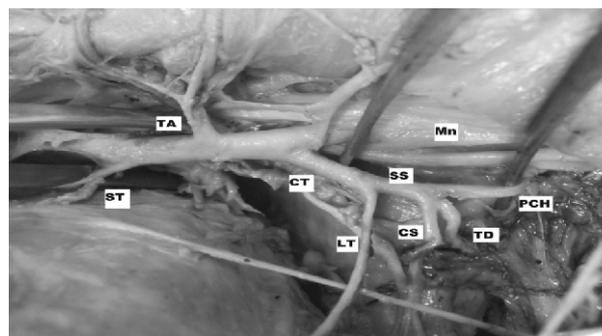


Fig: ST- superior thoracic; TA- thoracoacromial artery; LT- lateral thoracic artery; SS- Subscapular artery; PCH- posterior circumflex humeral artery; TD- thoracodorsal artery; CS- circumflex scapular artery; An- axillary nerve; Mn-Median nerve; CT-common trunk

AUTHOR NOTE

Sonal Jain, Junior Resident, (Corresponding Author)sonaljain7@gmail.com

Kulkarni PR, Professor, Department of Anatomy, Latur Medical College, Latur
Baig MM, Professor and Head
Department of Anatomy, V. M. Medical College, Solapur

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