



ORIGINAL RESEARCH PAPER

ANATOMY

THE MUSCULAR AXILLARY ARCH IN RELATION TO THE FORMATION OF POSTERIOR CORD OF BRACHIAL PLEXUS – A CASE REPORT

KEY WORDS: Axillary arch, Posterior cord, Brachial plexus injury

Dr Raghavendra D R

Assistant Professor, Kamineni Institute of Medical sciences, Narketpally

Dr Muralidhar P Shepur*

Assistant Professor, Gulbarga Institute of Medical Sciences, Gulbarga
*Corresponding Author

Dr Nirmala D

Professor, JJM Medical college, Davangere

ABSTRACT

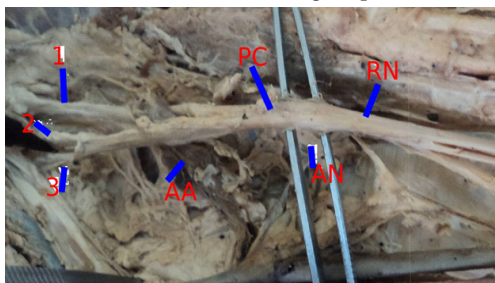
The muscular axillary arch is a musculotendinous structure that arises from the latissimus dorsi muscle and cross the axilla before inserting in to the humerus, brachial fascia or coracoid process. The presence of an axillary arch muscle, the muscular slips arising from the latissimus dorsi or pectoralis major and inserting in to various sites, is reported by various authors. During routine dissection for 1st M.B.S. Students in the Department of Anatomy, JJMMC, Davangere, we found this variation in a male cadaver aged 45-50 years. The muscular axillary arch was present on left side arising from latissimus dorsi muscle inserting in to the coracobrachialis muscle. It passes between the two divisions of formation of posterior cord of Brachial plexus. Compression by the axillary arch may leads to nerve injury.

INTRODUCTION

The muscular axillary arch is a musculotendinous structure that arises from the latissimus dorsi muscle and cross the axilla before inserting in to the humerus, brachial fascia or coracoid process¹. A number of cases of accessory muscle slips in the axilla arising from latissimus dorsi, pectoralis major, ribs and costal cartilages have been reported by different authors. These accessory muscle slips in the axilla have been described under variety of names (e.g., chondroepitrochlearis, dorso-epitrochlearis, etc). These variant bundles are commonly referred to as “axillary arch” muscle, regardless of their site of origin². The brachial plexus supplies the upper limb. Posterior divisions of all the three trunks of the brachial plexus assemble to form the posterior cord³. Here the presence of muscular axillary arch in relation to the formation of the posterior cord of Brachial plexus is reported.

CASE PRESENTATION

The present variation was observed during gross anatomical dissection class for undergraduate students in the Department of Anatomy, J J M Medical College, Davangere. We found this observation in a male cadaver aged about 50 years. In the present case the muscular axillary arch was present on the left side arising from the latissimus dorsi muscle and inserting in to fascia over the coracobrachialis muscle. it measures 10cms length and 2.5cms width at its broadest point. In the present case posterior cord of Brachial plexus is formed by union of two divisions, upper and lower. Upper division is the continuation of posterior division of upper trunk. Lower division is formed by union of posterior divisions of middle and lower trunk. The axillary arch muscle lies between the two divisions forming the posterior cord.



Picture 1. The axillary arch muscle lies between the two divisions forming the posterior cord. (AA-Axillary arch muscle, PC- Posterior cord, 1- Posterior division of upper trunk, 2- Posterior division of middle trunk, 3- Posterior division of lower trunk, RN-Radial nerve, AN-Axillary nerve)

DISCUSSION

The axillary arch was first identified by Alexander Ramsay in 1795, though reported in 1812. However it was Langer (1846) who described the muscle more accurately such that thereafter it became known as Langer's arch. Langer's arch usually is seen as a single band, but it can divide into double or, rarely, multiple structures which extend across the axilla. The nerve supply to this variant muscle is most commonly from medial pectoral nerve or thoracodorsal nerve. Clinically, the incidence of this muscle varies considerably: from 0.25% to 43.8%⁴. Muscular arch of axilla is usually unilateral but at operation in a 54 year-old woman, a bilateral muscular arch was described by Perre and Zoetmulder⁵. The embryological derivation of Langer's arch remains unknown, but the most reliable theory supports its origin from the panniculus carnosus, which is an embryological remnant of a more extensive sheet of skin associated musculature, lying at the junction between the superficial fascia and subcutaneous fat.⁴

Clinically it has been implicated in costoclavicular compression syndrome, axillary vein entrapment, median nerve entrapment, hyperabduction syndrome, thoracic outlet syndrome and shoulder instability syndrome². Compression by the axillary arch may leads to nerve injury.

REFERENCES

1. Rizk E, Harbaugh K, The muscular axillary arch: an anatomic study and clinical considerations. . Neurosurgery. 2008 Oct;63(4 Suppl 2):316-9; discussion 319-20. doi:10.1227/01.NEU.0000327033.22068.74.
2. Kathole MA, Joshi RA, Herekar NG, An Axillary arch muscle- a case report, International Journal of Anatomical Variations. 2012;5:32-34
3. Dutta AK, Essentials of Human Anatomy Part-111, Current Books International, 4th edition, 2009, p.49
4. Sharma T, Singla RK, Agnihotri G, Gupta R Axillary arch muscle Kathmandu University Medical Journal (2009), Vol. 7, No. 4, Issue 28, 432-434
5. Perre C. I., Zoetmulder F. A bilateral axillopectoral muscle. Neth J Surg, 1989, 4 :49.