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Published Paper's Title : An anomalous muscular belly in the axillary region– A case report

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A case report

An anomalous muscular belly in the axillary region– A case report

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Declaration

The Declaration of the authors for publication of Research Paper in Asian Journal of Modern and Ayurvedic Medical Science (ISSN 2279-0772) We M Khare1,C Mohanty2and B K Das3 the authors of the research paper entitled An anomalous muscular belly in the axillary region– A case report declare that , We take the responsibility of the content and material of our paper as We ourself have written it and also have read the manuscript of our paper carefully. Also, We hereby give our consent to publish our paper in ajmams , This research paper is our original work and no part of it or it's similar version is published or has been sent for publication anywhere else.We authorise the Editorial Board of the Journal to modify and edit the manuscript. We also give our consent to the publisher of ajmams to own the copyright of our research paper.

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ABSTRACT An anomalous muscular belly in the axillary region was observed in an adult male cadaver. It was attached at the edge of left latissimus dorsi below and lower border of subclavius above. Muscular belly was innervated by perforating branches of third and fourth inter costal nerves. This seems a variant of an axillary arch muscle. An understanding of the spectrum and complexity of this anatomical variation may be of benefit to any surgeon operating in axillary region.

Keywords: Anomalous Muscular Belly, Axillary Arch, Latissimus dorsi, Subclavius

INTRODUCTION

The axilla is a relatively small pyramidal compartment between the thoracic wall and the arm, which contains muscles and vital neurovascular bundles. They are important for their clinical and morphological reasons. Anatomical variations of axillary region are well documented. Occasional presence of an anomalous muscle i.e. axillary arch muscle and the relative closeness of vital structures are of importance to surgeons. Best-known variant structure of the axillary components of men is a muscular or fibro-muscular slip extending from the latissimus dorsi muscle. The latissimus dorsi muscle is a triangular flat muscle extended over the lumbar region and the lower half of the thorax from which its fibers converge to a narrow tendon and is inserted into the intertubercular *groove* of the humerus. Variations of latissimus dorsi can be seen at its origins where the number of dorsal vertebrae to which it attached, vary from four to seven or eight, as well as the varying number of costal attachments and muscle fibers that may or may not be reaching to the crest of the os ilium. The axillary

arch is a variant muscular slip of this muscle and is about 7 to 10 cm in length, splits from the upper edge of the latissimus dorsi and crosses the axilla in front of the axillary vessels and nerves (Gray's Anatomy 1989) Its embryonic origin is not clear and some anatomists consider muscular arches of the axilla as rudimentary phylogenetic remnants of the panniculus carnosus (Besana and Grenall2005) We report a rare presence of muscular belly in the axillary region with unique attachment and innervations which was not described earlier.

CASE REPORT

Unilateral occurrence of an anomalous muscular belly in left axilla was observed in an adult male cadaver (Fig. 1&2). The cause of death was not known. There was no evidence of past surgical procedures involving axilla, shoulder or the anterior thoracic wall. There was no other gross pathology in the region. The muscle was discovered during a routine faculty dissection. It was located in the mid-axillary region. There were no additional variations of muscles or vessels at the same region. Right axillary fossa of the cadaver showed no structural variation. The belly was recognized as a muscular slip measuring 14 cm in length and 5 cm in width at its broadest point. One end was attached to the edge of latissimus dorsi muscle of left side. After crossing the axilla, other end was attached at the lower border of subclavius muscle. The belly was innervated by perforating branches of third and fourth intercostal nerves. The belly also received a fine branch of intercostobrachial nerve after it had pierced the muscular slip. The arterial supply of the belly was from a single branch arising from subscapular artery. Brachial vein before joining the axillary vein was arched by the muscular slips of the belly. This finding has resemblance with an axillary arch

DISCUSSION

The axillary arch muscle (Langer's muscle, axillo pectoral muscle, Achselbogen Muskel) is a rare muscular anomaly of the axilla. It is described as a thin muscular slip extending from the latissimus dorsi to the pectoralis major (most common), coracoid process of the scapula, medial epicondyle of the humerus, teres major, long head of the triceps brachii, coracobrachialis or biceps brachii, and pectoralis minor (Bergman et al, 1988). However, attachment to subclavius is not reported in literature.

Axillary arch muscle (AAM) usually receives its nerve supply from the medial pectoral nerve, suggesting that it is derived from the pectoral muscles. When closely associated with the latissimus dorsi, AAM can also be supplied by the thoracodorsal nerve (Turgut et al, 2005). Additional sources of innervation include the perforating branches of the second, third and sixth intercostal nerves, and the medial cutaneous nerve of the forearm (Testut, 1892). In the present case, the anomalous muscle received innervations from the 3rd, 4th intercostals nerves and a fine branch of intercostobrachial nerve

Clinically, the presence of AAM may be detected as a palpable mass within the axilla or a loss of the typical axillary concavity (Merida-Velasco et al, 2003). It should also be considered in differential diagnosis of axillary swellings and during the construction of latissimus dorsi

flaps (Serpell and Baun,1991). A physical examination may not necessarily reveal all AAMs; magnetic resonance imaging may be

needed for an accurate diagnosis (Merida-Velasco et al, 2003).

To the best of our knowledge, this kind of anomalous belly is unique regarding its attachment as well as its nerve supply which has not previously been reported. We were unable to prove any functional disturbances since the study was done in cadaveric material. A more thorough description of muscular anomalies of the axilla will help in gaining a better understanding of the basis of associated lesions required for any surgeon performing an axillary lymphadenectomy especially for carcinoma breast.

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. **Figure legend**

Fig 1&2 Photograph shows a muscular belly in left axillary region attached to Latissimus dorsi and Subclavius (arrow)
1) Pectoralis minor cut, 2) Pectoralis major muscle 3) Axillary artery 4) Axillary vein
5) Subclavius 6) intercostobrachial nerve 7) 3rd intercostals nerve 8) 4th intercostals nerve 9) Latissimus dorsi muscle 10) Brachial vein 11) fine branch of intercostobrachial nerve


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