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LANGER'S AXILLARY ARCH: A CASE REPORT

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ABSTRACT

Axillary arch is an important anatomical variation noticed with Latissimus dorsi muscle. This bilateral variation was noticed during routine dissection of upper limb in a cadaver of 65 year old male. A muscle slip extending from latissimus dorsi muscle and encroaching on pectoralis major muscle, compressing neurovascular bundle passing under it was noticed. Existence of this variation and accompanying complications are discussed in light of previous literature.

Key words: Axilla, Axillary arch, Variation, Latissimus dorsi muscle.

INTRODUCTION

Latissimus dorsi is a large, flat, triangular muscle that sweeps over the lumbar region and lower thorax and converges to a narrow tendon. A muscular axillary arch, 7-10 cm in length and 5-15 mm in breadth, may sometimes be present, starting from the edge of latissimus dorsi, midway in the posterior fold, over the front of the axillary vessels and nerves to join the tendons of pectoralis major, coracobrachialis or the fascia over the biceps[1].This type of muscle arch first was observed by Ramsay[2] but was first described by Langer[3] in 1846; so it is described as Langer's axillary arch. A muscular slip arising from latissimus dorsi have different sites of insertion on muscles of arm such as coracobrachialis, biceps brachii, long head of triceps brachii, teres major, the coracoids process of scapula and the medial epicondyle of humerus ['chondroepitrochlearis' muscle]. All these are referred to as "axillary arch" muscle[4].

CASE REPORT

During the gross anatomy dissection of cadaver of 65 year old individual in the Department of Anatomy, Pravara Institute of Medical Sciences, Loni, Maharashtra, we found bilateral presence of an additional slip from Latissimus Dorsi muscle.

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It was observed that the slip originated from muscle belly of Latissimus dorsi, crossed over shaft of humerus covering third part of axillary artery, axillary vein, radial nerve, medical cutaneus nerve of arm, forearm and ulnar nerve and finally ended by an aponeurosis inserting on pectoralis major near its insertion. This variation was present bilaterally known as **Langer's axillary arch.**
Bilaterally the slip presented with muscle belly ending in aponeurosis which inserted in pectoral fascia.

DISCUSSION

Axillary arch muscle is an anomaly resulting in a wide range of clinical effects such as axillary vein entrapment, median nerve entrapment, difficulty in staging lymph nodes in malignancy cases, problems in axillary surgeries and shoulder instability [5]. It has been observed both unilaterally and bilaterally. Bilateral presence was reported by Perre and Zoetmulder[6] and Ko *et al*[7]; which was also noticed in this case. Prevalence of this arch was observed in Japanese population as 9.1%[8] and 5.3%[9], in Turkish as 1.9%[10] , in Bulgerian 3.6%[11] and in Spanish as 3%[12].

The presence of this arch can be explained embryologically. The development of skeletal muscle is divided into four stages as premyoblast stage, the myoblast stage, the myotube stage and the muscle fibre. Conversion into muscle fibres from myotubes takes place during fourth stage; wherein persistence of

some cells between muscles causes muscular variation considered as rudimentary phylogenetic remnants of the panniculus carnosus[14].

[Abbreviations-AA-Axillary arch, BB-Biceps brachii, PMM-Pectoralis major muscle, MPN-Medial pectoral nerve]

Nerve supply to axillary arch can be from medial pectoral nerve, indicating its embryological origin from pectoral muscle mass, whereas thoracodorsal nerve supply indicates its relation with latissimus dorsi muscle. In this case nerve supply by medial pectoral nerve shows close association of arch with pectoral muscle mass.

Conclusion

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producing additional slips as in this case[13]. It is also

Presence of axillary arch produces many clinical effects such as axillary vein entrapment syndrome, upper limb neurovascular symptoms, development of lymph edema of upper limb after breast surgery and many more. Even its occurrence can cause accidental ligation of the vessels and nerves of axilla during axillary surgeries. So its occurrence should be kept in mind by surgeons, neurologists, radiologists and cosmetic surgeons for proper diagnosis and planning of operativetreatment. The dimensions of this additional slips are as shown in Table No.1:

Table No.1: Dimensions of Axillary arch

	Right side	**Left side**
Length	7 cm	7 cm
Width	1 cm	1cm
Fleshy belly	5.5 cm	5.5 cm
Aponeurosis	1.5 cm	1.5 cm

Both bellies were supplied by medial pectoral nerve. (Fig.1, 2 and 3)

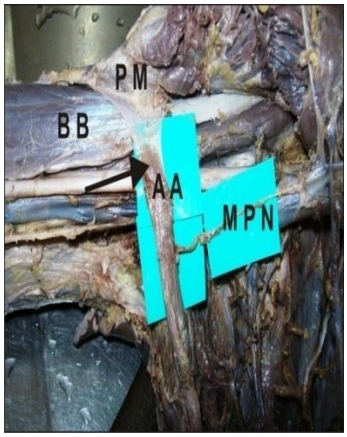

Figure 1:Right Arch

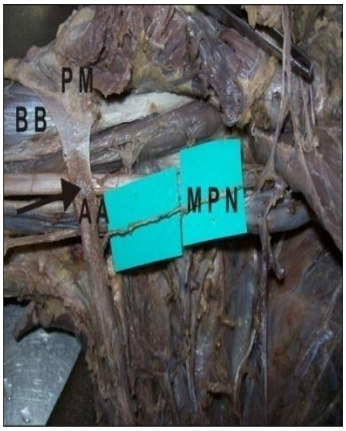

Figure 2:Right Arch

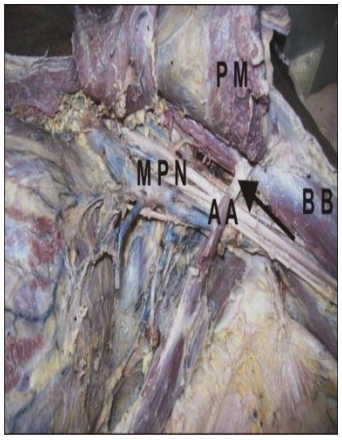

Figure 3:Left Arch

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