



Case Report:

A Prominent Fleshy Axillary Arch Muscle with Tendinous Intersection

Authors

Prakashchandra Shetty, Satheesha B Nayak,

Melaka Manipal Medical College (Manipal Campus), Manipal University, Manipal - 576104, Karnataka, India.

Corresponding Address

Dr. Satheesha Nayak B,

Professor of Anatomy,

Melaka Manipal Medical College (Manipal campus),

Manipal University, Madhav Nagar,

Manipal, Karnataka State, INDIA.

E-mail: nayaksathish@gmail.com

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Abstract: Axillary arch muscle or Langer's axillary arch is a fibromuscular structure that stretches across the axilla from its posterior wall to the anterior wall. We report an unusually large and fleshy axillary arch muscle. This muscle arose from the latissimus dorsi and got inserted into the pectoralis major, short head of biceps brachii and capsule of shoulder joint through three tendinous slips. It was supplied by a branch of thoracodorsal nerve. Notable feature of the muscle is that it had a tendinous intersection at its junction with the latissimus dorsi. This muscle is capable of compressing the neurovascular bundle of the axilla, causing varied symptoms. Knowledge of its possible existence is important for surgeons as it might lead to misdiagnosis.

Key Words: Axillary arch, latissimus dorsi, pectoralis major, axilla, brachial plexus

Introduction:

Axillary arch or Langer's axillary arch is a muscular slip that extends from posterior wall of the axilla to its anterior wall. It is also known as axillopectoral arch. It is one of the most common variations reported from axillary region.¹⁻³ Usually the axillary arch muscle extends from latissimus dorsi to pectoralis major, coracobrachialis, or fascia over the biceps brachii muscle. It measures about 7-10 cm in length. The muscle usually crosses superficial to the neurovascular bundle of the axilla and is supplied by the thoracodorsal nerve in most of the cases. The axillary arch might compress the nerves and vessels of axilla or might produce an unusual prominence which may be mistaken as lymphadenopathy. In this report, we discuss the clinical importance of a prominent axillary arch muscle.

Case Report

During regular dissection classes, we found an unusually large and fleshy axillary arch muscle in an adult male cadaver aged 65 years approximately. This muscle arose from the anterior border of latissimus dorsi and got inserted into the pectoralis major, short head of biceps brachii and capsule of shoulder joint through three tendinous slips (Figures 1 and 2). The muscle was 6.5 cm long and 2.5 cm broad. It was supplied by a branch of thoracodorsal nerve. Notable feature of the muscle is that it had a tendinous intersection at its junction with the

latissimus dorsi (Figure 3). The tendinous intersection was seen both on superficial and deep surface of the muscle.

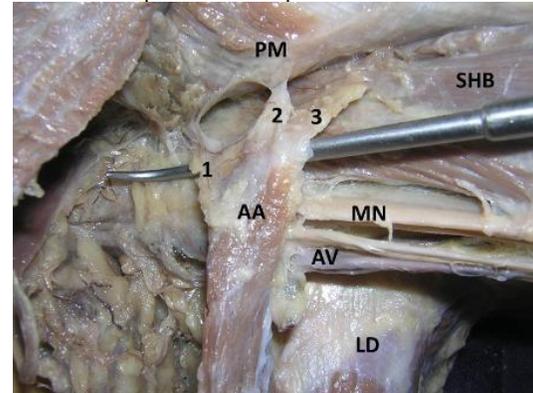


Figure 1: Dissection of left axilla showing the axillary arch (AA). Neurovascular bundle (NVB) of axilla, latissimus dorsi (LD) and pectoralis major (PMJ) muscles are also seen.

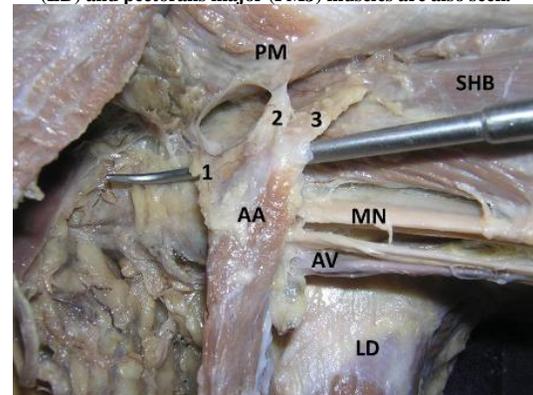


Figure 2: Dissection of left axilla showing the insertion of the axillary arch (AA) through three tendinous slips (1, 2 and 3). Neurovascular bundle (NVB) of axilla, latissimus dorsi (LD) and pectoralis major (PMJ) muscles are also seen.

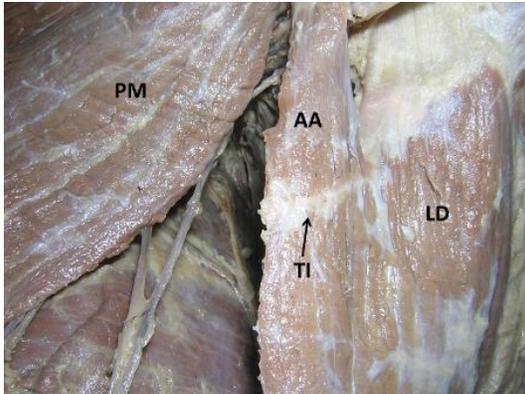


Figure 3: Closer view of the axillary arch muscle (AA). Note the prominent tendinous intersection (TI). Pectoralis major (PM) and latissimus dorsi (LD) are also seen.

Discussion

Knowledge about the axillary arch is important for various medical disciplines such as surgery, radiology, anesthesiology and plastic surgery. The axillary arch muscle can vary in its length and attachments. The symptoms produced by its presence might also vary from person to person. It might even remain unnoticed throughout life. There are many reports on symptomatic and asymptomatic axillary arch muscles. Presence of the arch might affect the axillary lymphadenectomy. Karanlik et al., report the presence of 9 cases of axillary arch muscles among the 758 patients who underwent axillary procedures. In 2 among them, the axillary arch was divided and in others it was preserved.⁴ There is a report on duplicated axillary arch muscle where one of the muscles got inserted into the pectoralis major and the other into the pectoralis minor. Both had their origin from the latissimus dorsi muscle.⁵ Presence of this muscle can cause the deep vein thrombosis in the upper limb. One such case has been reported by Magee et al.⁶ Axillary arch may be found unilaterally or bilaterally. A few cases of its occurrence have been reported.^{7,8} Presence of axillary arch may be associated with neurovascular symptoms such as pain in the arms or paresthesia which might aggravate with overhead activities. One such case with symptoms has been reported by Sellon et al.⁹ The routine radiological examination techniques did not reveal the presence of the muscle in this case. However, the muscle was noted when the radiographic procedure was done with arms overhead. The axillary arch muscle may be associated with other variations in the axilla or arm. Lama et al., have reported the presence of a chondrohumeralis in the same limb which had the axillary arch.¹⁰ In shape and insertion pattern the axillary arch muscle varies greatly. The cases of fan shaped muscle¹¹ and muscle with multiple insertions¹² have been reported. The axillary arch muscle is similar to the previous publications in terms of its origin, insertion and nerve supply. The Unique feature of this case is the presence of tendinous intersection at the junction of this muscle and the latissimus dorsi. So far there are no reports on the axillary arch with tendinous intersection. The muscles like rectus abdominis, which have tendinous intersections are derived from the fusion of adjacent myotomes. We believe that, even here, the tendinous intersection may indicate the possibility of fusion between adjacent myotomes.

Conclusion

Axially arch muscle may produce a bulge in the axilla, which may be mistaken for a neoplasm of lymphadenopathy. When present, it might compress the neurovascular bundle of the axilla and produce symptoms. It might even restrict the movements of the shoulder joint. The knowledge of the

axillary arch is important for surgeons and radiologists. It is also useful to the plastic surgeons and physiotherapists dealing with the problems associated with shoulder movements.

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