

Short Communication

Axillary Arch (Of Langer): Incidence, Innervation, Importance

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Citation

Pai MM, Rajanigandha, Prabhu LV, Shetty P, Narayana K. Axillary Arch (Of Langer): Incidence, Innervation, Importance. *Online J Health Allied Scs.*2006;1:4

URL

<http://www.ojhas.org/issue17/2006-1-4.htm>

Open Access Archives

<http://cogprints.ecs.soton.ac.uk/view/subjects/OJHAS.html>

<http://openmed.nic.in>

Submitted: Feb 01, 2006; Revised: May 22, 2006; Accepted: May 31, 2006; Published: Jul 08, 2006

Abstract:

The present study was planned to find out the incidence of accessory muscle arches in the axilla of 68 upper limb (38 right and 30 left) dissections. Langer's arch was observed in one right limb out of the 68 limbs, total incidence was 1.47%. The arch extended from the latissimus dorsi to the fascia covering the biceps brachii. The incidence is low in South Indian population (Dravidians) compared to the various other populations reported in literature. A branch from the lateral cord of brachial plexus supplied it in contrast with the previous reports. The surgical significance of this muscle is reviewed.

Key Words: Axilla, Accessory muscles, Biceps, Lymphadenectomy, Neurovascular bundle.

Introduction:

Variable muscle slips such as chondro-epitrochlearis, dorso-epitrochlearis, Costo-coracoideus or axillary arches are occasionally encountered in the axilla.(1) It measures 7-10 cm in length and 0.5-1.5cm in breadth, and extends from the edge of latissimus dorsi to the pectoralis major, or coracobrachialis or to the fascia covering the biceps brachii.(2) It may be a single band like

structure, or may be found as multiple bands and known to be present in 7% of Japanese subjects.(3) Its occurrence is still higher, around 10% in Belgian subjects(4), however, on the other hand surprisingly as low as 0.25% in British.(5) This indicates that, the incidence of axillary arch varies in different races though the incidence is unknown in Indians. The present study was planned to evaluate the incidence of axillary arch in cadavers of South Indian origin.

Materials and Methods:

This study was conducted in 68 (38 right and 30 left) upper limb dissections. The muscular arch was dissected from its origin to insertion. The nerve twig supplying it was dissected.

Results:

The axillary arch was present in one right upper limb (2.63%) and if the 68 limbs were considered, the incidence was 1.47%. The muscular slip originated from the latissimus dorsi and inserted into the fascia covering the short head of biceps brachii. A branch from the lateral cord supplied it.



Photograph of right axilla showing the muscular axillary arch (lower arrow) extending from the latissimus dorsi to the fascia covering the biceps brachii.

Note that a branch (upper arrow) from the lateral cord is supplying the arch. The arch has crossed superficial to the neurovascular bundle near its attachment.

Discussion:

Previous studies on axillary arches have revealed that it is a variable structure with the incidence ranging from 0.25% (5) to 10%.(4) The incidence of this arch in the present study (1.47%) is well within the range given above. Based on the formation and nerve supply, Takafuje et al (6) classified the arches into 8 different types. The present case does not fit into their classification since it was not supplied either by the thoracodorsal or medial pectoral nerve or caudal pectoral nerve (branch of medial pectoral nerve). In this study a branch from the lateral cord supplied the arch.

Since the arch crosses superficial to the neurovascular bundle in the axilla, it could compress them, especially during abduction and lateral rotation of the shoulder joint. Thus it could obstruct the axillary vessels, particularly the vein.(7) Some authors have discussed its

importance in differential diagnosis of thoracic outlet and shoulder instability syndromes.(4) It should also be considered in differential diagnosis of axillary swellings and the construction of latissimus dorsi flaps.(5)

The axillary arch should be recognized and excised to expose the axillary artery and vein in patients with trauma and to perform axillary lymphadenectomy or axillary bypass.(8) According to Petrsek AJ et al (9), if an axillary arch is encountered during axillary lymphadenectomy, the lymph nodes posterior and lateral to the arch should be excised. The presence of this anomaly preoperatively may be diagnosed by magnetic resonance axillography.(10) Simple excision of this muscle is curative.(7,8) Therefore, knowledge of the anatomical variations in this area is necessary for surgical interventions.

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