

Innervation of Muscular Axillary Arch by a Branch from Pectoral Loop

Inervación del Arco Muscular de la Axila por un Ramo Pectoral

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SUMMARY: The latissimus dorsi muscle is a flat and triangular muscle that covers the lumbar region and the inferior part of thorax. This muscle supplied by thoracodorsal nerve(C6, C7,C8), a branch of posterior cord of brachial plexus. Many reports showed that a muscular axillary arch, flat muscle arising from lateral border of latissimus dorsi, may be seen in 7% of the population, but there is little information about the innervation of this part. This report deals with dissecting the axillary region of a 41 year-old male cadaver in which we observed a muscular axillary arch was innervated by a single nerve branch of pectoral loop.

KEY WORDS: Pectoral loop; Innervation; Axillary arch; Muscular variation.

INTRODUCTION

The latissimus dorsi muscle is a flat and triangular muscle that covers the lumbar region and the inferior part of thorax. From the wide attachment fibers of this muscle, a thick mass forms and turns round the inferolateral border of teres major muscle and finally attach to the humeral intertubercular sulcus by a tendinous band with about 7cm long. The innervation of this muscle is from thoracodorsal nerve (C6,C7,C8), a branch from posterior cord of brachial plexus (Salmon, 1995 and McMin, 1999).

A muscular axillary arch, 7-10 cm in length and 5-15 mm in breadth, may cross from the edge of latissimus dorsi, over the front of axillary vessels and nerves to, variously, join the tendon of pectoralis major, coracobrachialis or fascia over the biceps. It occurs in about 7% of cases and may be multiple (Salmon and Takafuji *et al.*, 1991).

There are rarely reports about specific innervation of this muscle. This report deals with dissecting the axillary region of a cadaver. we observed a muscular axillary arch which is innervated by a single nerve branch of pectoral loop. This finding is important during axillary lymphadenectomy and other surgical related operation.

CASE REPORT

During a routine dissection in a 41-year old male cadaver in the dissection hall of anatomy department, authors noted an aberrant muscular slip lateral to the latissimus dorsi in the right axillary region. The region of interest was finely dissected and photographed.

When we cleared the region we noted that, latissimus dorsi had a muscular axillary arch, 8 cm in length and 2 cm in breadth. It originated from the lateral edge of latissimus dorsi, crossed over the front of axillary vessels and nerves, joined to the posterior part of tendon of pectoralis major and then attached to lateral border of intertubercular sulcus of humerus (Fig 1).

We observed a single nerve branch that originated from pectoral loop of brachial plexus that innervated axillary arch of latissimus dorsi muscle in this cadaver (Fig 2).

DISCUSSION

Innervation of latissimus dorsi muscle is done by thoracodorsal nerve from the posterior cord, derives its fibers from the sixth to eighth cervical ventral rami, arises

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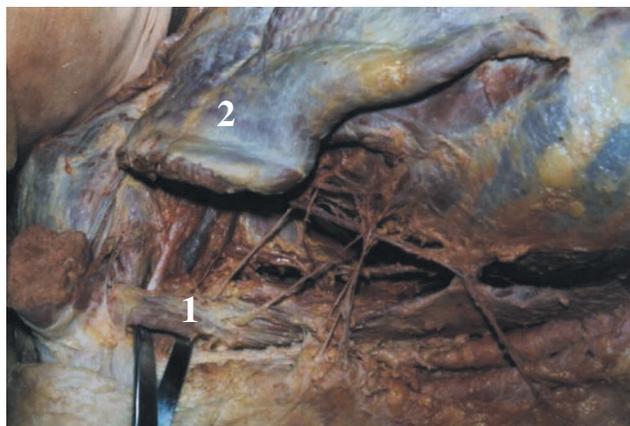


Fig. 1. Dissection of the right axillary region. 1. Muscular axillary arch; 2. Pectoral major muscle.

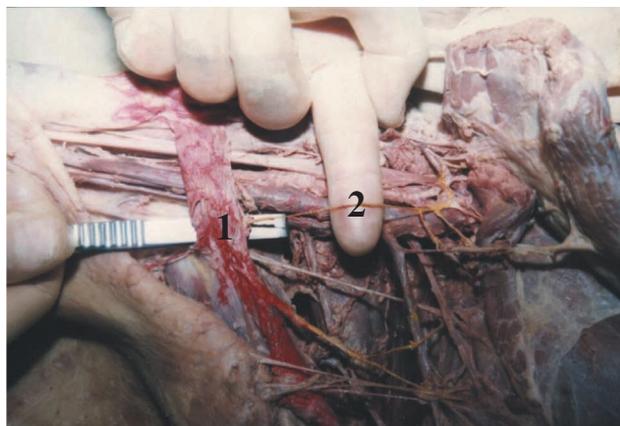


Fig. 2. Dissection of the right axillary region. 1. Muscular axillary arch; 2. Single nerve branch of the pectoral loop that innervated muscular arch of the latissimus dorsi.

between the subscapular artery along the posterior axillary wall to supply the latissimus dorsi, reaching its distal border (Salmon).

A muscular axillary arch occurs in about 7% of cases (Salmon and Takafuji *et al.*). It is a most common muscular variation in the axilla. In this case we observed muscular axillary arch 8 cm in length and 2 cm in breadth, that it was innervated by a single nerve branch from pectoral loop, but other parts of this muscle was innervated by thoracodorsal nerve.

A rare number of variations about innervating of

latissimus dorsi have been reported (Takafuji *et al.*; Horiguchi, 1992 and Dharap, 1994). Takafuji *et al.*, reported that lateral part of the muscular arch of the axilla in left side a 74 years old female supplied by caudal pectoral nerve from the medial pectoral nerve. Also Horiguchi *et al.* reported an aberrant muscular nerve to the latissimus dorsi muscle arising from the posterior cutaneous nerve of arm, was found bilaterally in a 65 years old female.

This report showed that innervation of muscular axillary arch may be done by a single nerve branch of pectoral loop. This finding is important during axillary lymphadenectomy and other surgical related operation.

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RESUMEN: El músculo latísimo del dorso es un músculo triangular aplanado que cubre la región lumbar y la parte inferior del tórax. Este músculo está inervado por el nervio toracodorsal (C6, C7, C8), un ramo del fascículo posterior del plexo braquial. Algunos reportes han mostrado que el arco muscular de la axila, es un músculo aplanado que se origina desde el borde lateral del músculo latísimo del dorso y que ha sido encontrado en el 7% de la población, pero es poca la información existente acerca, de la inervación del mismo. Se relata un caso de arco muscular de la axila encontrado en una disección de un cadáver de sexo masculino de 41 años, en el cual se observó la inervación del músculo por un simple nervio ramo del arco pectoral.

PALABRAS CLAVE: Arco pectoral; Inervación; Arco axilar; Variación muscular.

REFERENCES

- Dharap, A. An unusually medial axillary arch muscle. *J. Anat.*, 184 (3):639-41, 1994.
- Horiguchi, M.; Koizumi, M.; Isogai, S. & Sekiya, S. An aberrant muscular nerve to the latissimus dorsi muscular from cutaneous nerve of the arm. *Kaibogaku Zasshi*, 67(1):13-8, 1992.
- Mcmin, R. M. H. *Last's Anatomy*. 8th. Ed. New York. Churchill Livingstone, 1999. p58.
- Salmon, S. *Muscle*. In Williams, P.; Bannister, L. H.; Berry, M. M.; Collins, P.; Dyson, M.; Dussak, J. E. & Ferguson M, W. J. *Grays Anatomy*. 38th. Ed. London, Churchill Livingstone, 1995. pp. 836-7.
- Takafuji, T.; Kanbayashi, T.; Yokoyama, T.; Moriya, A.; Azuma, S. & Sato, Y. The muscular arch of the axilla and its nerve supply in Japanese adult. *Kaibogaku Zasshi.*, 66(6):511-23, 1991.

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