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Tendinous Slips from Coracobrachialis and Biceps Brachii Causing Neurovascular Entrapment

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Abstract: ***A male cadaver of around 60 years of age showed an abnormal neurovascular entrapment, on the left side, by the musculo tendinous fibres arising from coracobrachialis and biceps brachi. The muscular fibres ended as thick cords of connective tissue and blended with the medial intermuscular septum compressing tightly the median nerve and brachial artery. The finding has implications in median nerve compression syndromes and during arm surgeries and radiologic investigations.***

Keywords: Coracobrachialis, Biceps Brachi, Nerve Entrapment**,** Median Nerve compression

1. Introduction

Coracobrachialis is a comparatively less bulky muscle seen in the arm. It is considered as a weak flexor muscle of the arm. Due to this reason the muscle is considered functionally unimportant[1] The origin is from the coracoid process of the scapula where it couples with the short head of biceps brachii. Its insertion is to the middle of the humerus. The musculocutaneous nerve, which arises from the lateral cord of the brachial plexus pierces the muscle. This is considered as a pointer to identify the coracobrachialis. Some authors consider it to be the remnant of the adductor compartment of the arm. Variations of the coracobrachialis have been reported earlier with accessory heads, slips arising from shoulder joint capsule and inserting to medial intermuscular septum, medial epicondyle, medial supracondylar ridge.

Here we report a unique case in which the fibres blend with the medial intermuscular septum and also receives tendinous slips from the biceps. Together they compress the median nerve and the brachial artery.

2. Observations

During routine dissection of cadaver for undergraduate teaching, in Govt. Medical College, Thiruvananthapuram, a male cadaver of age almost 60 years, was found to show a variation in the left side. The coracobrachialis was seen to have some slips arising from the muscle and passing over the median nerve and the brachial artery to attach to the medial intermuscular septum. It also received tendinous slips from the biceps brachii and the fascii covering it. Together they were seen to create a bridge under which the median nerve and the brachial artery were seen to pierce in a manner so as to cause compression to both. (See Fig.1)

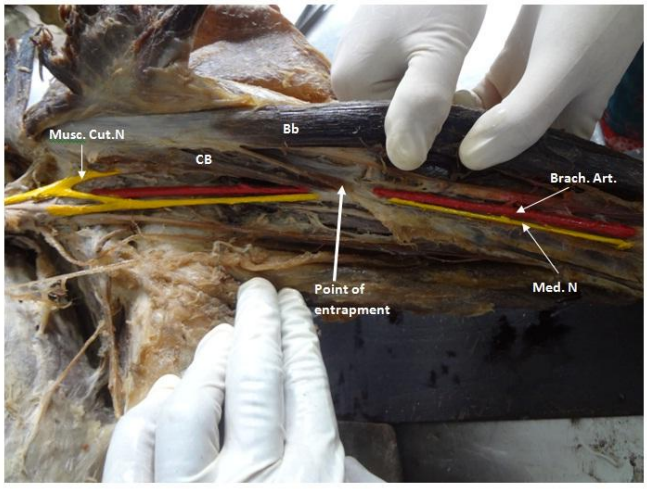

Figure 1: Showing the photograph of the slips from biceps brachi (Bb) and coracobrachialis (CB) compressing the brachial artery (Brach. Art.) and median nerve (Med. N). The coracobrachialis can be identified by noting the musculocutaneous nerve (Musc. Cut. N.) piercing it.

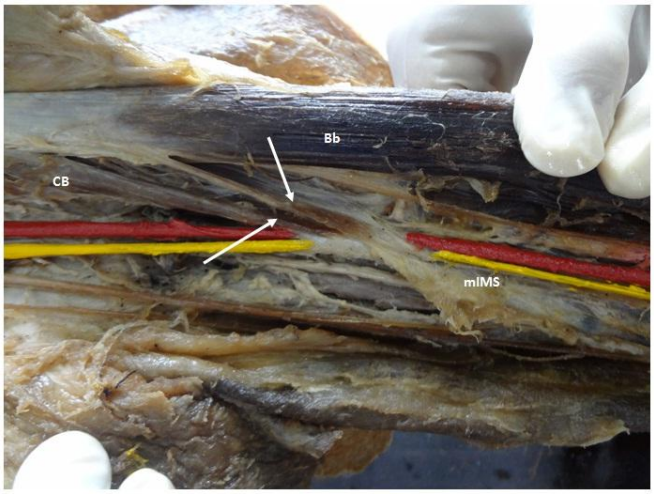

Figure 2: Showing the photograph of the tendinous slips (arrows) from Biceps brachi (Bb) and coracobrachialis (CB) compressing the brachial artery and median nerve. The slips

are seen to merge with the medial inter muscular septum (mIMS).

3. Discussion

Kumar et al has reported a case in which an accessory head of coracobrachialis has crossed over the median nerve and brachial artery[2]. Kopuz has reported and reviewed about accessory coracobrachialis [3]. Accessory heads of biceps have been reported by Warner et al[4]. Accessory heads of biceps brachii have been reported and its imaging has also been studied by Gheno et al[5]. Rodrigues et al has reported coracobrachialis accessory head compressing median nerve and brachial artery[6]. Accessory coracobrachialis was also reported by Gupta et al[7]. Gopalrao et al has also described a case of an abnormal coracobrachialis compressing the brachial artery and the median nerve[8].

The pattern of compression of muscle accessory slips and heads is throwing light on the evolutionary and embryological aspects of the muscle origin. In some mammals the coracobrachialis has a tricipital origin. The musculocutaneous which is seen to pierce the muscle is in fact due to the two heads that arose from the coracoid enclosed the nerve within it. The lower head is usually suppressed. In some cases it can present as the ligament of Struthers attaching to the supratrochlear spur. [9]

In the present case the tendinous fibres also received fibres from the biceps brachi which made the fibres tauter to compress the median nerve and the brachial artery.

4. Conclusion

The variation described should be considered when evaluating a case of a combined median nerve and brachial artery compression syndrome. The variation should be in mind in arm surgeries as well as when interpreting cross section imaging.

5. Acknowledgement

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