

## BILATERAL ACCESSORY BICEPS : A CASE REPORT

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**Abstract:** Presence of supernumerary head of biceps brachii muscle are common, with variable frequency in different populations. However presence of bilateral accessory biceps muscles has been rarely reported. During routine anatomical study of an adult female cadaver, bilateral accessory biceps was observed with dissimilar attachment of the lower ends. The right side tendon was attached to the radial tuberosity beneath the main tendon while the muscle on the left side was attached on the medial border of the radius just above the interosseous membrane, 2.5 cm below the radial tuberosity.

### INTRODUCTION

The biceps brachii is a large fusiform muscle having two proximal attachments. The long head is attached to the supraglenoid tubercle of the scapula and the short head to the coracoid apex in common with the coracobrachialis. The two parts blend into a common belly in the lower third of the arm and its tendon gets attached to the dorsal aspect of the radial tuberosity. The tendon shows a medial expansion (bicipital aponeurosis) that merges with the deep fascia of the forearm. Unilateral presence of supernumerary head of biceps brachii has been variously quoted as 12% in African blacks, 18% in Japanese and 10% in European whites<sup>1,2,3</sup>. The shaft of humerus, medial intermuscular septum, capsule of the shoulder joint, tendon of pectoralis major and terminal part of the deltoid or coracobrachialis are the anomalous sites of the supernumerary head<sup>2</sup>. Bilateral three headed biceps was reported by Swieter and Carmichael<sup>3</sup> with each third head having a proximal humeral attachment and these heads distally join the conjoint tendon. Ozan et al<sup>4</sup> had observed an unusual accessory biceps brachii muscle originating from the tendon of deltoid and this then gave three tendinous slips on approaching the cubital fossa. Two of these join the bicipital aponeurosis whereas the third tendon was attached to the ulnar head of pronator teres. In our case study, an accessory muscle in relation to biceps brachii showing unusual distal attachment was bilaterally observed and in being reported.

### CASE REPORT

In the course of gross anatomical examination of the flexor compartment of the arm of an adult female cadaver, an accessory muscle was seen bilaterally. The right biceps brachii (fig.) had its long and short heads arising from the supraglenoid tubercle and the coracoid process of scapula respectively and these two fused with each other 5 cm above the lateral epicondyle of humerus. The conjoint tendon so formed got attached to the radial tuberosity and the bicipital aponeurosis turned medially to merge with the deep fascia of forearm. The accessory muscle arose from the humeral shaft just superomedial to brachialis and lateral to the insertion of coracobrachialis. It formed a 14 cm long strap belly ending in a cord like tendon. This passed under cover of the main tendon, gave slip to the bicipital aponeurosis and then got attached to the radial tuberosity dorsal to the conjoint tendon. This accessory muscle received innervation from the musculocutaneous nerve.

The left side biceps brachii had similar attachments and the conjoint tendon was formed 3.5 cm superior to the lateral epicondyle of humerus with similar lower attachment as the right muscle. The accessory muscle showed similar proximal attachment as seen on the right side. However, a 3 cm long tendinous cord was seen to connect it to the tendon of pectoralis major in the inferior part of bicipital sulcus. It formed a long muscle belly and bial 5 cm long tendon lying dorsal to the biceps tendon. It then turned anteromedially to be inserted on the medial border of radius 2.5 cm below the tuberosity and just above the interosseous membrane and it also had few fibres inserting in to the bicipital aponeurosis.

### DISCUSSION

Common sites of attachment of the supernumerary head of biceps are usually from various regions of the shaft of humerus to the fascia covering the



Left biceps brachii with Accessory third head. -L-long head, S-short head, A-accessory head T-main tendon, t-accessory tendon.

short head. However, this head always joined the main muscle or tendon distally. In a bilateral four headed biceps of an old Japanese woman, the third head had origin from the shaft of humerus and insertion into the main tendon. The fourth head with a fibrous origin from the intertubercular sulcus joined the confluence of the main tendon and the third head. In addition, the left third head gave a slip to the posterior fascia of pronator teres forming a tunnel for the median nerve and brachial artery where it was compressed. The accessory biceps reported by Ozan et al<sup>4</sup> arose from the tendon of deltoid and it gave three slips in the cubital fossa, two of these joined the bicipital aponeurosis and the third the ulnar head of pronator teres. Median nerve compression could be felt during supination of the forearm<sup>5</sup>.

In our case the accessory biceps was present bilaterally with similar proximal attachments from the shaft of humerus just superomedial to brachialis and lateral to the lower end of coracobrachialis. The left and right muscle then formed independent bellies and tendon which ran alongside the main belly. The left muscle<sup>6</sup> inserted to the medial border of radius 2.5 cm below the radial tuberosity while the right muscle was attached to the radial tuberosity with the main tendon of its respective side. Both muscles gave fibrous slips which joined the bicipital aponeurosis of the respective sides. The muscles received innervation from branches of musculocutaneous nerve. The bilaterality as well as its mode of insertion is rare. This muscle<sup>6</sup> can enhance the power of elbow flexion and supination of the forearm. The knowledge of such entities can be helpful to the surgeons as this region is prone to fractures and the accessory muscle can be used in free muscle transplantation for the elbow flexion.

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