**ORIGINAL RESEARCH PAPER**

**INCIDENCE OF THE THIRD HEAD OF THE BICEPS BRACHII IN THE UTTAR PRADESH POPULATION**

**ABSTRACT**

Biceps brachii is a dual headed flexor muscle of flexor compartment of upper arm, originates proximally with a long head from supraglenoid tubercle and short head from coracoid process of scapula. Our aim was to elucidate the incidence and morphological features of the third head of the biceps brachii muscle. Out of 30 cadavers, we found the three headed biceps brachii unilaterally in four male cadavers, one belonging to the left side and three to right side. The third head was observed in four cadavers, bringing its overall incidence to 13.33%. While the short and long head had a normal origin, in three cases the third head originated near the insertion of the coracohumeral ligament and at the origin of the brachialis and in both cases it goes and merges with the remaining two heads and inserted into the posterior part of radial tuberosity. One was thicker as compared to the rest. In fourth case it originates along with the long head of biceps brachii and then the third head crosses the musculocutaneous and median nerve in the middle of arm and then finally its tendon goes and inserts into the deep fascia of the arm.

**Material and Methods:**

The present study was conducted in the Department of Anatomy, K.D. Medical College Hospital and Research Center, Mathura. Out of 30 cadavers, we found the three headed biceps brachii unilaterally in four male cadavers, one belonging to the left side and three to right side. The third head was observed in four cadavers, bringing its overall incidence to 13.33%. While the short and long head had a normal origin, in three cases the third head originated near the insertion of the coracohumeral ligament and at the origin of the brachialis and in both cases it goes and merges with the other two heads and inserts into the posterior part of radial tuberosity. One was thicker as compared to the rest. In fourth case it originates along with the long head of biceps brachii and then the third head crosses the musculocutaneous and median nerve in the middle of arm and then finally its tendon goes and inserts into the deep fascia of the arm.

**Results and Discussion:**

Biceps brachii muscle frequently shows variations in its number of heads and morphology. Absence of either short head or long head of biceps brachii is very rare. No cadavers with absent short or long head of biceps, were found in our study. Sreedevi and colleagues found two cases where biceps was having an extra head. In both the case she found that the third head was arising from the humerus at the insertion of coracohumeral ligament, and it goes and attaches to bicipital aponeurosis. In first case she also got fourth head which was also arising from the humerus at the insertion of coracohumeral ligament and also from the tendinous insertion of deltoid muscle and it goes and joins the under surface of main muscle just above the elbow joint. In our study we got the origin from the same place in two cases but they both got inserted to the two other heads of biceps brachii. Shashikala and Ashwini found one case of three head of biceps brachii. They found that the third head of biceps brachii arose from upper third of humerus at the V shaped insertion of deltoid muscle. It courses and merged with other two heads to form common tendon and was inserted on posterior part of radial tuberosity. We encountered two similar cases in our study.

**Introduction:**

Biceps brachii, a muscle of anterior compartment of arm has been described as having a long head originating from the supraglenoid tubercle and glenoid labrum and a short head from the coracoid process of scapula. The two heads join to form a common bicipital tendon distally, and insert into the posterior rough part of radial tuberosity and a bicipital aponeurosis which merges with the deep fascia of forearm. Some anomalous and tendinous fibers go and insert in the bicipital aponeurosis. Biceps brachii is the most common muscle to show anatomical variations in its morphology and number of heads. Most frequent is the presence of third head and sometimes it may have four to seven heads. The incidence of third head of biceps brachii varies from 0.18% to 21.5% in different populations. However, as many as seven heads of the biceps brachii have been reported, the most common one being the third head. Some authors have tried to trace the functional aspect of these extra heads by the abnormal movements which they can produce and others have tried to draw clinical implications like the head being mistaken for a tumour or suspecting that it produces compression symptoms. So, the aim of the present study was to elucidate the incidence and morphological features of the third head of the biceps brachii muscle.

**KEY WORDS:** Biceps brachii, muscle and Third head.

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Fig. 1 Shows the third heads of biceps brachii (BB)
supination of forearm. Presence of the supernumerary heads of biceps brachii would increase its kinematics. Therefore from the applied anatomical point of view, its third head increases its power of flexion and supination. The supernumerary heads of biceps brachii may cause compression of the neurovascular bundle of the anterior compartment of arm depending on their attachments and course of fibers. These abnormal fibers may cause entrapment of the median nerve and cause nerve compression syndromes.

Conclusion:
In conclusion, the accessory heads of the biceps brachii have great clinical importance for surgeons, orthopedic surgeons, anesthetists, neurologists and anatomists. Awareness of the morphological variants of biceps muscle delivers better pre-operative evaluation, safe surgical intervention within the arm and better postoperative results.

References: