

Abnormal Communication of Human Median and Musculocutaneous Nerves in Lower Arm

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Dear Sir,

The brachial plexus innervates the upper limb. The brachial plexus are usually formed by the fusion of the anterior primary rami of the C5-8 and the T1 spinal nerves. They supply the muscles of the back and the upper limb. As it is the point of formation of many nerves, variations are common here. Communications between the branches of brachial plexus are well reported phenomenon and it has several clinical and surgical implications. The aim of this article is to report a finding of abnormal communication between the musculocutaneous nerve (MCN) and the median nerve (MN) in the lower third of arm, which may provide additional information for the classification of communications between the MCN and MN, as described by the earlier workers [1-3].

During routine educational dissection for Phase-I medical undergraduates, we observed a variation in the termination of MCN in the upper limb of middle-aged Indian male cadaver. After piercing the coracobrachialis muscle, at the upper border of teres major, the MCN divided into lateral cutaneous nerve of the forearm and another branch that joined the median nerve (MN) at the junction of middle and lower 1/3rd of arm [Table/Fig-1]. Courses of all other major nerves like median, ulnar, axillary and radial were as usual.



[Table/Fig-1]: Figure shows the connection of musculocutaneous nerve with median nerve.

*: Connection; MCN: Musculocutaneous nerve; MN: Median nerve; Cbr: coracobrachialis; BA: Brachial artery.

Shukla et al. (2010), mentioned various types of communications between MCN and MN [4]. Knowledge of these is important to anatomists, radiologists, anesthesiologists and surgeons. The presence of anatomical variations of the peripheral nervous system is often used to explain unexpected clinical signs and symptoms. These kind of variations in nerves may be the result of altered signaling between mesenchymal and neuronal growth cones [5] or circulatory factors at the time of fusion of brachial plexus cords [6]. The presence of such nerve communications are not just confined to man, studies on comparative anatomy have reported the existence of such connections in monkeys and in some apes. Thus suggesting that communications may represent the primitive nerve supply of anterior arm muscles [7].

These variations have clinical importance in post-traumatic evaluations and exploratory interventions of the arm for peripheral repair. The knowledge of the possible communications between musculocutaneous and median nerves is also important in the anterior approach for the fracture of the humerus and regional nerve blocks [4].

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