



CADAVERIC STUDY OF COMMUNICATION BETWEEN MEDIAN AND MUSCULOCUTANEOUS NERVE

Soma Sekhar R.¹, Raju Sugavasi²

¹Department of Anatomy, Viswabharathi Medical College, R.T Nagar, Penchikapapadu, Kurnool, A.P. India, ²Department of Anatomy, Fathima Institute of Medical sciences (FIMS), Kadapa, A.P. India.

ABSTRACT

Background: Communications between the branches of brachial plexus is a common phenomenon and it has several clinical and surgical implications. The knowledge of communications between musculocutaneous and median nerves is also important in the anterior approach for the fracture of the humerus and regional nerve blocks

Methods: Cadaveric study was carried out on 100 upper limbs by using 50 embalmed cadavers to find out the communication between median and musculocutaneous nerve

Results: out of 100 upperlimbs, the variation was found in 2 specimens.

Conclusion: The occurrence of such type of communication is clinically important for surgeons and anesthetists to perform pain management Therapies in related to the upper limb.

Key Words: Median nerve, Musculocutaneous nerve, Communication

INTRODUCTION

Variations like communication between the median nerve and musculocutaneous nerves are interest for anatomists and surgeons because these variations may be vulnerable to damage in surgical procedures .The median nerve, formed by the union of the terminal branch of the lateral (C5, C6, C7) and medial (C8, T1) cords of the brachial plexus, after the formation it enters the arm lateral to the brachial artery and to the forearm between the two heads of the pronator teres. The musculocutaneous nerve is the continuation of the lateral cord of the brachial plexus. It pierces the coracobrachialis muscle and descends laterally between the biceps and brachialis muscles and supplies all the muscles in the anterior compartment of the arm [1].

joint and bilateral horizontal incision was made in both proximal and distal ends of the longitudinal incision. The skin, superficial fascia and deep fascia were incised, later various flexor muscles were retracted and searched for unusual communications of median and musculocutaneous nerves. The present study was conducted at Kurnool medical college, Andhra Pradesh, India.

RESULTS

Out of 100 upper limb specimens, the abnormal variations in the communication between the median nerve and the musculocutaneous nerve were found in 2 specimens. The two variations were identified in right side of upper limbs (FIGURE: 01 & 02).

MATERIALS&METHODS

In the present cadaveric study, we dissected a Total numbers of 100 upper extremities of 50 cadavers. An incision was made longitudinally on the anterior surface of the arm, from the level of acromion process to the elbow

DISCUSSION

According to Le Minor et al [2], variations of communication between median (MN) nerve and musculocutaneous nerves (MCN) are classified as 5 types, in type I there

Corresponding Author:

Soma Sekhar R., Assistant Professor, Department of Anatomy, Viswabharathi Medical College, R.T Nagar, Penchikapapadu, Kurnool- 518463. Andhra Pradesh. India, E-mail: anatsomu@yahoo.in

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is no communication between the MN and MCN. In type II the fibres of medial root of MN pass through MCN and join the MN in the middle of the arm, in type III MN and MCN run together later that lateral root of MN separates from it. In type IV MCN arises from median nerve after joining to lateral root of the MN. In type V MCN is absent. Veinreratos & Anagnostopolou et al conducted studies on 79 cadavers and 22 cadavers found communications between MCN and MN in [3]. Prasada Rao and Chaudhary et al [4], observed 24 cases of such communications, but communication branch arising from the musculocutaneous nerve to the median nerve. Lovesh shukla et al [5] observed four communications between median and musculocutaneous nerve. According to Sharadkumar Pralhad Sawant et al [6] Out of 100 specimens the variations in the anastomosis between the median nerve and the musculocutaneous nerve were found in 30 specimens. Loukas & Aqueelah et al [7] found 63.5% of cadavers consist of abnormal communicating branch between the median and musculocutaneous nerves. According to Veinreratos& Anagnostopolou et al [8] out of 79 cadavers, 22 cases were found communications between MCN and MN. Chauhan et al [9] recommend the consideration of the phylogeny and the development of the nerves of the upper limb for the interpretation of the nerve anomalies of the arm. According to Chiarapattanakom et al. [10] limb muscles develop from the mesenchyme of local origin, while axons of spinal nerves grow distally to reach the muscles and or skin. They blamed the lack of coordination between the formation of the limb muscles and their innervations for appearance of a communicating branch.

ONCLUSION

Anatomical Knowledge of communications between the MCN and the MN may clinically important in related to axilla and upperlimb injuries, as well as in their repair operations. This kind of study may be useful to surgeons at the time of peripheral nerve repair and posttraumatic evaluations.

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Figure 1: Communication between median and musculocutaneous nerve: 1: median nerve, 2: musculocutaneous nerve, 3: communication branch



Figure 2: Communication between median and musculocutaneous nerve: 1: communication branch, 2: musculocutaneous nerve, 3: median nerve.