

Cadaveric Study on the Absence of Musculo Cutaneous Nerve – Research Article

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ABSTRACT

Introduction: Musculocutaneous nerve is derived from the ventral rami of 5th to 7th cervical spinal nerves of Lateral cord of the Brachial plexus. It pierces the Coraco brachialis and descends downwards innervates Biceps brachii and Brachialis muscles. Study was conducted to find out the variations related to the Musculocutaneous nerve in adult human cadavers.

Material and Methods: Total number of 50 upper limbs were used for this study from 25 adult human embalmed cadavers.

Result: Out of 50 upper limbs we noticed absence of Musculocutaneous nerve in 2 cases and the incidence was 4%.

Conclusion: These variations are essential for surgeons while performing Surgeries in related to axilla and upperlimb.

Keywords: Musculocutaneous nerve, Brachialis, Brachial plexus

INTRODUCTION

Musculocutaneous nerve (MCN) is the chief nerve of flexor compartment of arm. It is derived from the lateral cord of brachial plexus from C5, 6, 7 spinal nerves. It pierce the coracobrachialis, and also gives motor twig to it, later innervates both heads of biceps brachii and brachialis muscles, then it continues as lateral cutaneous nerve of forearm just lateral to the tendon of biceps brachii muscle. The median nerve (MN) has derived from two roots, the medial root (C8, T1) and lateral root (C5, 6, 7) in related lateral to third part of axillary artery. Then it passes through anterior compartment of arm, crossing the brachial artery from lateral to medial side enters into the cubital fossa.¹ Anatomical knowledge of variations in the brachial plexus like absence of the musculo cutaneous nerve may useful to clinicians in upper limb surgeries. So the present study was conducted to find out the variations related to the musculocutaneous nerve in adult human cadavers.

MATERIAL AND METHODS

Total number of 50 upper limbs was used for the present study from 10 % formalin fixed 25 embalmed human cadavers to find out the variations in related to the Musculocutaneous nerve. Study was conducted in the department of anatomy at Narayana Medical College, Nellore, Andhra Pradesh, India. Upper limbs were dissected and exposed the musculo cutaneous nerve according to the methods described by Romanes in cunnighams manual of practical anatomy. Entire musculo cutaneous nerve origin, course, motor supply to the muscles, termination, relations were observed and reported in this study.

STATISTICAL ANALYSIS

Microsoft office 2007 was used to make table. Results of the study are based on the descriptive statistics.

RESULTS

Out of the 50 upper limbs studied 2 (4%) cases showed the absence

of musculocutaneous nerve on right side. Musculocutaneous nerve was seen to be arising from the median nerve and given a thick branch without piercing the coarcho brachialis muscle, then it provided the muscular branches to coarcho brachialis, biceps brachii and brachialis muscles, later on continued as lateral cutaneous nerve of forearm [In case no 1 (figure-1)]. Motor branches to the coarcho brachialis, biceps brachii and brachialis muscles originate directly from the median nerve and no branch was passing through the coracobrachialis muscle [Case no 2 (figure-2)].

DISCUSSION

The incidence of absence of the musculo cutaneous nerve was reported previously in various studies. According to Balachandra N et al.² out of 20 cases observed In 1(5%) case in right upper limb that median nerve had 3 roots with the absence of the musculocutaneous nerve and In 1(5%) case left upper limb the Musculocutaneous nerve was seen arising from the Median nerve. Prasada Rao et al³ observed absence of musculocutaneous nerve in 8% of 24 upper limbs. Bhattarai et al⁴ reported absence was ranging from 1.7 to 15%. U.W. Mane et al.⁵ noticed a case of absence of musculocutaneous nerve on right side male cadaver and that case flexor muscles were innervated by median nerve. Gumusburun and Audiguzel et al.⁶ reported the bilateral absence of the musculo cutaneous nerve in 72 years old female. Parchand et al.⁷ noticed complete merging of musculo cutaneous nerve into the median Nerve and coracobrachialis, biceps and brachialis muscles were innervated by the branches of the median nerve. Sateesha Nayak⁸ reported the absence of musculocutaneous nerve and observed the median nerve supplied the biceps, coracobrachialis and brachialis muscles and gave lateral cutaneous nerve of the forearm. Rajendra et al⁹ noticed absence of Musculocutaneous nerve unilaterally on the left side of a 40 years old male cadaver.

CONCLUSION

Present study we reported a rare cases of unilateral absent of musculocutaneous nerve associated with origin from the median nerve and relation to coraco brachialis muscle. The Anatomical knowledge of the variations of the course and distribution of the lateral cord of brachial plexus is very significant while

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Figure-1: Absence of Musculo Cutaneous Nerve (MN: Median Nerve, BMN: Branch From Median nerve, NCB: Nerve to Coraco Brachialis, NBB: Nerve to Biceps Brachii, NBR: Nerve to Brachialis)



Figure-2: Absence of Musculo Cutaneous Nerve (MN: Median Nerve, NCB: Nerve to Coraco Brachialis, NBB: Nerve to Biceps Brachii, NBR: Nerve to Brachialis, LCNF: Lateral Cutaneous Nerve of Forearm)

performing shoulder reconstructive surgery so that these structures can be identified and protected.

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