

## Variations of the Musculocutaneous Nerve: A Cadaveric Study

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### Abstract

**Introduction:** Arm is supplied by brachial plexus. Musculocutaneous nerve is branch from lateral cord of brachial plexus. Musculocutaneous nerve runs along 3<sup>rd</sup> part of Axillary artery on the lateral side. First muscle pierce by musculocutaneous nerve is coracobrachialis, it also supplies the muscle. The nerve enter the anterior/flexor compartment of arm and innervates both biceps brachia and brachial. Finally this nerve continues as lateral cutaneous nerve of forearm. Elaborate knowledge of both its course along with variations in its course is of prime importance for any general surgeon, orthopedician, doctor operating in emergency and physiotherapist.

**Materials and Methods:** In the Department of Anatomy, Subharti Medical College, Meerut, Uttar Pradesh, India 60 dissected arms of human cadaver were observed for any variation in musculocutaneous nerve.

**Results:** Out of 120 specimens there was no specimen in which the musculocutaneous nerve was absent. Coracobrachialis muscle was pierced by the musculocutaneous nerve in all specimens. After piercing the coracobrachialis muscle in 5% specimens the nerve reunite with median nerve.

**Keywords:** Brachial Plexus; Musculocutaneous Nerve; Variations

### Introduction

Arm is supplied by brachial plexus. Brachial plexus originates from C5-T1 mostly. It is divided into roots, trunks, divisions, cords and branches [1]. Musculocutaneous nerve is branch from lateral cord (C5, C6, C7) of brachial plexus. Musculocutaneous nerve runs along 3<sup>rd</sup> part of Axillary artery on the lateral side [2]. First muscle pierced by musculocutaneous nerve is coracobrachialis, it also supplies the muscle. The nerve enters the anterior/flexor compartment of arm where it is superficial to brachialis and deep to biceps brachii and innervates both the muscles [3,4]. This nerve gives branches to humerus and elbow. Finally this nerve continues as lateral cutaneous nerve of forearm. From its origin till termination wide range of variation are commonly seen. In some cases musculocutaneous nerve was even absent [5]. Elaborate knowledge of both its course along with variations in its course is of prime im-

portance for any general surgeon, orthopedician, doctor operating in emergency and physiotherapist.

### Materials and Methods

In the Department of Anatomy, Subharti Medical College, Meerut, Uttar Pradesh, India. In about 2 year span 120 upper limbs (60 right and 60 left) were dissected from 60 human cadavers used for teaching undergraduate and postgraduate students. The dissected specimen contain the axilla, pectoral region, the arm and the forearm. Musculocutaneous nerve was observed in all the specimens for any variation.

### Observations and Results

When the dissected specimen was studied musculocutaneous nerve was present in all 120 specimens. Coracobrachialis muscle

was also pierced by musculocutaneous nerve in all specimens. In 5% ( both right and left arm of 3 cadavers ) specimens the after piercing coracobrachialis muscle musculocutaneous nerve reunite with median nerve.

Variations	Finding
Asbent	0%
Prenent	100%
Pierce coracobrachialis	100%
Reunit with median nerve	5%

Table 1: Variations observed.

Discussion

In our study we observed that musclocutaneous nerve was present in all the 120 specimens while Prasad Roa in there study observed two cases in which musculocutaneous nerve was absent from brachial plexus and Jamuna M [6] noted 3 cases in which the nerve was absent unilaterally . In our study musculocutaneous nerve reunite with median nerve after piercing coracobrachialis muscle in 5% specimens similar findings were seen by Jamuna M in their study 2% specimens show reunion with median nerve after piercing coracobrachialis also Joshi observed similar finding in 1 specimen [7].

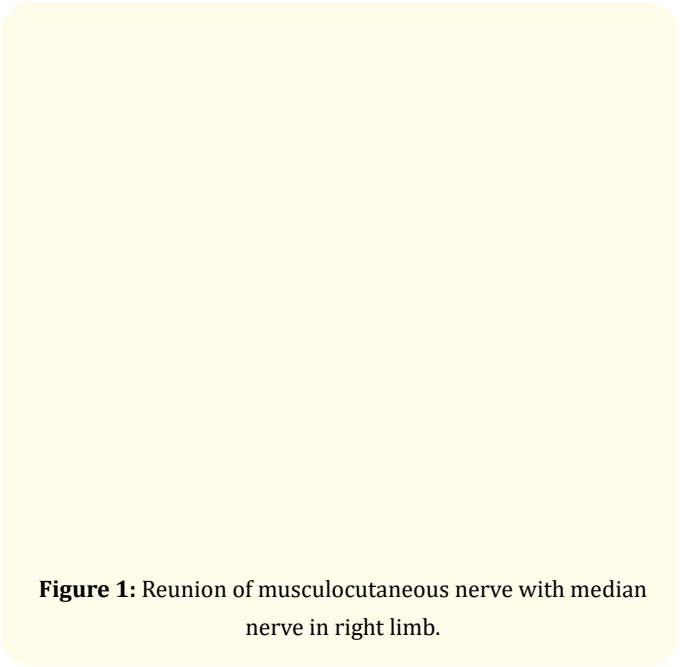


Figure 1: Reunion of musculocutaneous nerve with median nerve in right limb.

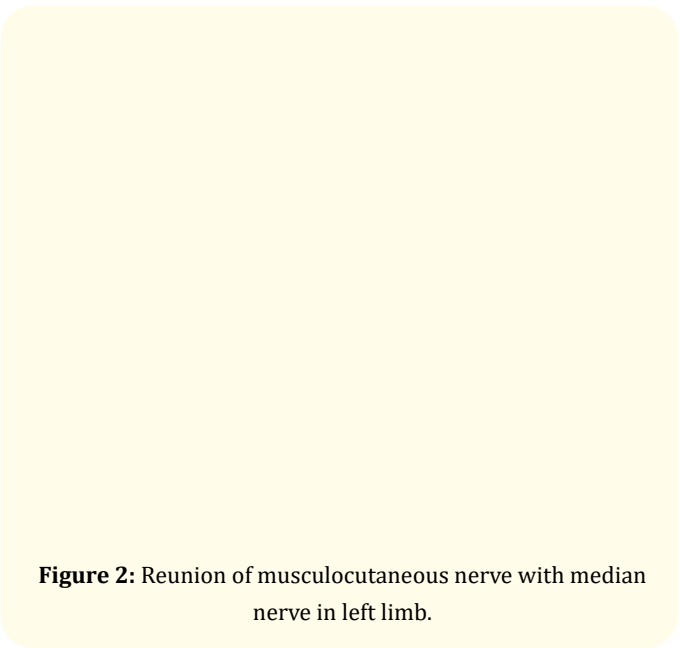


Figure 2: Reunion of musculocutaneous nerve with median nerve in left limb.

Conclusion

Elaborate knowledge of course along with variations in course of musculocutaneous nerve is of prime importance for any general surgeon, orthopedician , any doctor operating in emergency and even to plastic surgeons.

Conflict of Interest

None.

Financial Support

None.

Ethical Clearance

Not required.

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