

Penetration of Radial nerve by subscapular artery

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Abstract

The present case report is about an abnormal radial nerve which was penetrated by Subscapular artery, the largest branch of Axillary artery. The nerve was completely divided into two parts; one passing posterior and the other anterior to the subscapular artery, claspings it between them. However, on due course, both parts of the nerve united together to form single radial nerve in the lower part of Axilla.

Key Words: Axillary artery, brachial plexus, radial nerve, subscapular artery, posterior cord.

Introduction

Radial nerve is the largest branch of the posterior cord of Brachial plexus with root value of C_{5,6,7,8} and T₁. In axilla, it lies posterior to the third part of Axillary artery and anterior to Subscapularis, Latissimus dorsi, and Teres major muscles. Subscapular artery is the largest and most variable branch of the Axillary artery.¹ It arises at the lower border of the Subscapularis muscle and is accompanied distally by the nerve to the Lattisimus dorsi. About 4 cm. from its origin, it divides into Circumflex scapular artery and Thoracodorsal artery.²

Case Report

A very rare variation was found in the right axilla in a female nepali cadaver during routine dissection in the Department of Anatomy. The formation of brachial plexus and its relations with different branches of Axillary artery were keenly studied.

Interestingly the Radial nerve was completely divided into two parts by the penetrating Subscapular artery. (Fig: 1) The artery was clasped by these divided parts of nerve. After the short distance traveled in the axilla, these divided parts of nerve get united to form a single Radial nerve. The medial, lateral and posterior cords of Brachial plexus and their branches were found normal. Similarly, all other branches of Axillary artery were found normal.

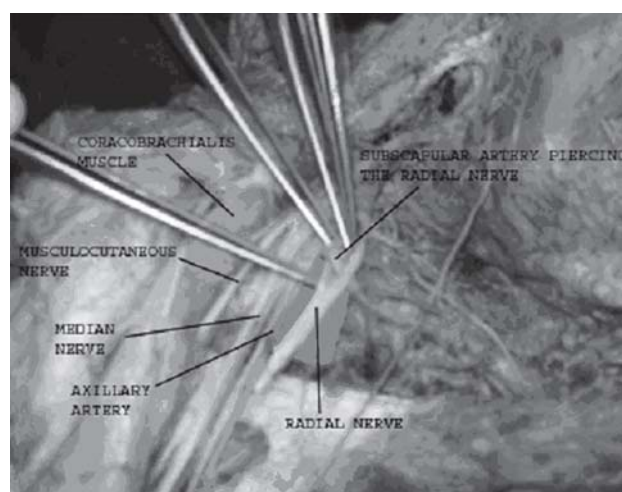


Fig. 1: Dissection of right axilla of a Nepali female cadaver showing penetration of subscapular nerve by radial nerve.

Discussion

There are only few variations of Radial nerve that have been documented by different anatomists. There was a case documented, in which Radial nerve arose from the union of posterior division of inferior trunk and the middle trunk and no contribution from the superior trunk.³

There was another case study noted, in which accessory radial root which was the branch of inferior trunk and was

communicated with the root from the posterior cord to form the Radial nerve. The Radial nerve was penetrated by aberrant Axillary artery from deep to superficial during its course.⁴ In our study, for the first time in nepali cadaver, we found the Radial nerve to be penetrated by Subscapular artery and the two parts of nerve divided, later uniting to form a single Radial nerve. In literature, it has been said that the segmental origin of the Axillary artery and its branching may determine the arrangement of the Brachial plexus during fetal development.⁵ This may be the cause of this rare variation. To our knowledge, such variations have rarely been reported in the literature.

Conclusion

Though we could not ascertain the presence of any particular ailment in our cadaver, this variation of neurovascular bundle is quite rare and the Radial nerve might have caused compression of the Subscapular artery. This knowledge may have some practical implications to the vascular surgeons and hence it is studied and reported

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