

## Case Report

# UNUSUAL COURSE OF SUPERFICIAL PALMAR BRANCH OF RADIAL ARTERY

**Navajyothi Dalayi.**

Senior Lecturer, Department of Anatomy, International Medical School, Management and Science University, Malaysia.

## ABSTRACT

Variations in the course of arteries of upper limb are often noticed everywhere. During routine cadaveric dissection, a superficial branch of radial artery running unusually was found in the left upperlimb of a male cadaver.

The superficial palmar branch of radial artery runs superficial to flexor retinaculum and enters the palm. In the present case, the superficial palmar branch of radial artery was piercing the flexor retinaculum and was running with in the carpal tunnel medial to median nerve. Thrombosis in this can compress the median nerve and lead to carpal tunnel syndrome.

**KEY WORDS:** Superficial Palmar Branch Of Radial Artery, Flexor Retinaculum, Median Nerve, Carpal Tunnel Syndrome.

**Address for Correspondence:** Dr. Navajyothi Dalayi, Senior Lecturer, Department Of Anatomy, International Medical School, Management and Science University, Malaysia.

**E-Mail:** drnavajyothid@gmail.com

## Access this Article online

### Quick Response code



DOI: 10.16965/ijar.2017.200

**Web site:** International Journal of Anatomy and Research  
ISSN 2321-4287  
[www.ijmhr.org/ijar.htm](http://www.ijmhr.org/ijar.htm)

Received: 23 Mar 2017

Accepted: 25 Apr 2017

Peer Review: 24 Mar 2017

Published (O): 31 May 2017

Revised: None

Published (P): 31 May 2017

## INTRODUCTION

Radial artery is one of the arteries of upperlimb. It runs along the lateral side of the forearm. It gives its superficial palmar branch proximal to the wrist which runs superficial to the flexor retinaculum and enters the palm where it joins the superficial ulnar artery to complete the superficial palmar arterial arch.

Carpal tunnel is an osseofibrous tunnel which contains median nerve and long flexor tendons of upperlimb. Due to lack of flexibility of the tunnel walls, any condition that causes swelling of its contents may compress the median nerve with in the tunnel leading to carpal tunnel syndrome [1].

Presence of arteries could be one of the causes.

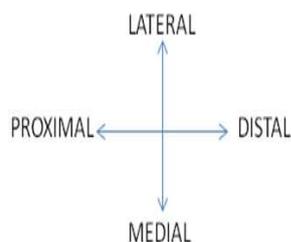
## CASE REPORT

In a routine undergraduate dissection in the Department of Anatomy, the arterial pattern of upper limbs in an adult male cadaver was exposed. While tracing the course of radial artery and its branches in the left upper limb, we noticed an unusual course of superficial palmar branch of radial artery. The arterial pattern in the right upper limb was found normal. The abnormality was photographed.

## OBSERVATIONS

An adult male cadaver was dissected to demonstrate the undergraduate students. The arterial pattern of the upper extremities was traced. The radial artery was running normally

**Fig. 1:** showing the unusual course of superficial palmar branch of radial artery.



**SPBA-** Superficial palmar branch of radial artery,  
**MN-** Median nerve,  
**FR-** Flexor retinaculum



in both the upper limbs but the course of its superficial palmar branch on the left side was found abnormal. The superficial palmar branch of radial artery in the left upper limb arose from the radial artery proximal to the wrist. It passed between thenar muscles for some distance and then pierced the flexor retinaculum. It coursed within the carpal tunnel medial to median nerve and then entered the palm. In the palm its course was normal where it joined the superficial ulnar artery to complete the superficial palmar arch. No other visible arterial anomaly of the contralateral limb was noticed.

## DISCUSSION

Anomalous arterial pattern in upper extremities are well documented which are unilateral and bilateral [2].

The variation presented has clinical significance because of its relationship to the median nerve. It has been reported that median nerve compression caused by the thrombotic artery in the carpal tunnel could easily be confused with more common causes such as radiculopathy and neuropathies. Such a rare case of compression of median nerve leading to carpal tunnel syndrome due to thrombotic and dilated abnormal median artery in the carpal tunnel was noticed previously [3-6].

The superficial branch of radial artery running deep to flexor retinaculum was noticed by Olave

describing thrombosis of which can compress the median nerve within the carpal tunnel [1,3].

The present variation is very rare condition as it is piercing the flexor retinaculum and running in the carpal tunnel. Knowing the course of superficial palmar branch of radial artery is not only important for its possibility of causing carpal tunnel syndrome but also has importance for reconstructive surgeons as this artery is used as flap for finger reconstruction [7,8].

## CONCLUSION

Anomalous course of superficial palmar branch of radial artery running in the carpal tunnel is not only having clinical importance compressing the median nerve but also for vascular surgeons who use this artery for finger reconstruction.

**Conflicts of Interests: None**

## REFERENCES

- [1]. Olave E, Prates JC, Gabrielli C, Del Sol M, Mandiola E. Abnormal course of the superficial palmar branch of the radial artery. *Surgical and Radiologic Anatomy*. 1996 Jun 1;18(2):151-3.
- [2]. Rodríguez Niedenfür M, Vazquez T, Nearn L, Ferreira B, Parkin I, Sanudo JR. Variations of the arterial pattern in the upper limb revisited: a morphological and statistical study, with a review of the literature. *Journal of Anatomy*. 2001 Nov 1;199(5):547-66.

- [3]. Olave E, Prates JC, Gabrielli C, Pardi P. Median Artery and Superficial Palmar Branch of the Radial Artery in the Carpal Tunnel. Scandinavian journal of plastic and reconstructive surgery and hand surgery. 1997 Jan 1;31(1):13-6.
- [4]. Jackson IT, Campbell JC. An unusual cause of carpal tunnel syndrome. Bone & Joint Journal. 1970 May 1;52(2):330-3.
- [5]. Levy M, Pauker M. Carpal tunnel syndrome due to thrombosed persisting median artery. A case report. The Hand. 1978 Feb 1;10(1):65-8.
- [6]. Salter M, Sinha NR, Szmigielski W. Thrombosed persistent median artery causing carpal tunnel syndrome associated with bifurcated median nerve: A case report. Polish Journal of Radiology. 2011 Apr;76(2):46.
- [7]. Lee TP, Liao CY, Wu IC, Yu CC, Chen SG. Free flap from the superficial palmar branch of the radial artery (SPBRA flap) for finger reconstruction. Journal of Trauma and Acute Care Surgery. 2009 Apr 1;66(4):1173-9.
- [8]. Yang JW, Kim JS, Lee DC, Ki SH, Roh SY, Abdullah S, Tien HY. The radial artery superficial palmar branch flap: a modified free thenar flap with constant innervation. Journal of reconstructive microsurgery. 2010 Oct;26(08):529-38.

**How to cite this article:**

Navajyothi Dalayi. UNUSUAL COURSE OF SUPERFICIAL PALMAR BRANCH OF RADIAL ARTERY: A CASE REPORT. *Int J Anat Res* 2017;5(2.2):3843-3845. DOI: 10.16965/ijar.2017.200