RARE VARIANT OF PALMARIS LONGUS - A CASE REPORT

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Abstract: Palmaris longus is one of the most variable muscles in the human body. Being one of the most utilised donor site for tendon reconstruction procedures, every reconstructive surgeon should beware of it. Frequently the muscle may be absent or it may be duplicated, digastric, reversed, entirely muscular or tendinous. Duplication is one of the rare variations with reported incidence of 0.5-5.9% of the cadaveric arms. We report here, a rare variation of the duplication of Palmaris longus in a cadaver.

Keyword: Palmaris longus, Duplication

INTRODUCTION:
Palmaris Longus, a slender fusiform muscle of the forearm, is phylogenetically classified as a retrogressive muscle i.e. a muscle with a proximal short belly and a long slender tendon distally. Arising from the medial epicondyle of humerus by common flexor origin, this myotendinous flexor gets inserted into the palmar aponeurosis. It is often described as one of the most variable muscles in the human body and its morphological aberrations were classified as agenesis, duplications, reversed, digastric, accessory slips, variable origin and insertion. Clinically, this muscle and its variations have gained importance for tendon reconstruction, nerve compression syndromes, palpable mass and topographical landmark to identify the median nerve during carpal tunnel decompression procedures.

Duplication of Palmaris longus is one of the rare variations with reported incidence of 0.5-5.9%. We report here a rare variation of duplication of Palmaris longus which takes origin from the flexor carpi ulnaris.

CASE REPORT
During our dissection in a 62 year old male cadaver, the following variation of Palmaris longus (two origin and two insertion) was noticed.
On the left forearm, Palmaris longus -1 (normal) which coincided with the normal anatomy and morphology of Palmaris longus, having its origin from the common flexor origin and insertion into the central part of palmar aponeurosis was noted. In addition to it, we dissected out Palmaris longus-2 (duplicated) taking origin from the Flexor carpi ulnaris and getting inserted into the flexor retinaculum (Fig 1). Duplicated Palmaris longus is situated on the ulnar aspect of normal Palmaris longus muscle and this muscle maintained its fullcourse in the ulnar aspect of the forearm. On further dissection, there was no other anomalous muscle variations found in the same or the opposite limb. Both the muscles derived their nerve supply from the median nerve by separate branches.

FIG -1:PL 1 -Normal Palmaris longus, PL 2- Duplicated FCU- Flexor Carpi Ulnaris, FCR - Flexor Carpi Radialis.

DISCUSSION

Palmaris longus, a phylogenetic degenerating muscle is found to be absent in higher primates like chimpanzees and gorillas ⁸. Similarly, following the law of evolution, the absence of Palmaris longus is the most common anomaly (10%) in human population which is more prevalent in whites ⁹,¹⁰. The muscle has attracted the attention of clinicians as the first choice donor tendon in reconstructive surgeries, as it fulfills the necessary requirements of length, diameter, being superficial, tendinous and can be used without producing any functional deformity ⁷. However being one of the most common aberrant muscle, every reconstructive surgeons should be aware of its variations. Duplication of Palmaris longus is one of the rare variant of Palmaris longus, being reported with varying prevalence in different race, age, sex and population (0.5 – 5.6%) ⁶. According to Humphry, the superficial layers of the forearm muscles differentiates from radial, intermediate and ulnar sectors ¹¹. Palmaris longus muscle usually differentiates from the intermediate sector, but if the differentiation occurs either from radial or ulnar sector, duplication occurs. In the present case, the duplicated Palmaris longus from flex or carpi ulnaris has its course in the ulnar sector, in addition to normal Palmaris longus (PL1). Such duplication was reported by Gruber ¹² on 1000 Russian cases with a prevalence of 3.1%. Since the muscle can be utilised for tendon reconstructive surgeries, its duplication has the advantage of preserving the normal Palmaris longus. Duplication of Palmaris longus has also been reported along with reversed and accessory Palmaris Longus ¹³. Clinically, duplication can be symptomatic in the form of nerve compression syndrome, as median nerve lies deep to its tendon just proximal to wrist joint. Abnormal insertion, hypertrophied belly and reversed Palmaris longus have also been associated with these scenarios.

CONCLUSION
Palmaris longus, a phylogenetic degenerating muscle has been reported with many morphological variations. But duplication of Palmaris longus is a rare variant and has been reported to be 0.5 to 5.6% only. Being one of the most variable muscle in the human body and as every reconstructive surgeon should be aware of it, this variation of duplication has been reported.

REFERENCES


