Introduction

Hand is one of the most frequently used parts of our body. All the precision work to be done depends on good grasp of the hand which in turn depends on both extensor and flexor muscles as well as short muscles of the hand. There is vast literature available which proves the fact that the extensor muscles and tendons of forearm and hand show great degree of variability. Hence, having as good knowledge of muscles and tendons of forearm and hand plays an important role, especially when surgeries are planned here [1].

Normally the extensor indicis proprius (EIP) arises from the lower part of posterior surface of ulna and the adjoining interosseous membrane and gets inserted into the ulnar side of the tendon of extensor digitorum for index finger. This small muscle belly with a single tendon to the ulnar side of the tendon of extensor digitorum for index finger. This small muscle belly with a single tendon to the ulnar side of the tendon of extensor digitorum for index finger is named as “extensor indicis brevis”.

Materials and Methods

Thirty four (34) formalin preserved upper limb specimens of seventeen adult human cadavers were dissected and studied. The skin, superficial fascia and deep fascia from the extensor compartment of the forearm and hand were excised and studied.

Results

During routine dissection of normal cadavers, it was found that the extensor indicis proprius (EIP) muscle was found to be missing bilaterally from the extensor compartment of the forearm. It was also observed that out of the five deep extensor muscles of the forearm, three muscles, i.e., abductor pollicis longus, extensor pollicis brevis and extensor pollicis longus were found to be arising from the posterior surfaces of radius and ulna along with adjoining interosseous membrane, but the EIP muscle was clearly not seen among the above mentioned deep extensor muscles of the forearm (Fig. 1, 2).

In the same cadaver on the dorsum of the right hand there was a small muscle belly originating from the joint capsule and ligaments of the carpals bones. The muscle was found to be crossing between 2nd and 3rd metacarpal bones in relation to the 2nd dorsal intersosseal muscle. The muscle belly was about 4cm long and its tendon was about 4.2cm long (Fig. 3). It was getting inserted by a single tendon on to the ulnar side of the tendon of extensor digitorum for index finger. This small muscle belly with a single tendon to the index finger is named as “extensor indicis brevis”.

Conclusion

During routine dissection of normal cadavers, it was found that the extensor indicis proprius (EIP) muscle was found to be missing bilaterally from the extensor compartment of the forearm. It was also observed that out of the five deep extensor muscles of the forearm, three muscles, i.e., abductor pollicis longus, extensor pollicis brevis and extensor pollicis longus were found to be arising from the posterior surfaces of radius and ulna along with adjoining interosseous membrane, but the EIP muscle was clearly not seen among the above mentioned deep extensor muscles of the forearm (Fig. 1, 2).

In the same cadaver on the dorsum of the right hand there was a small muscle belly originating from the joint capsule and ligaments of the carpals bones. The muscle was found to be crossing between 2nd and 3rd metacarpal bones in relation to the 2nd dorsal intersosseal muscle. The muscle belly was about 4cm long and its tendon was about 4.2cm long (Fig. 3). It was getting inserted by a single tendon on to the ulnar side of the tendon of extensor digitorum for index finger. This small muscle belly with a single tendon to the index finger is named as “extensor indicis brevis”.

Conclusion

Appreciation of bilateral absence of EIP associated with presence of unilateral extensor indicis brevis muscle has its surgical implications during tendon transfer and reconstructive surgeries.

ABSTRACT

Introduction: Variations in the structures of hand has its surgical importance. A rare anatomical variation is bilateral absence of extensor indicis proprius (EIP) associated with presence of unilateral extensor indicis brevis muscle. Aim: A good knowledge of the extensor tendons of hand has a surgical relevance, especially the tendon of EIP because of its usefulness in tendon transfer reconstructive surgeries. Material and Methods: Thirty four (34) upper limb specimens of seventeen (17) adult human cadavers were studied to observe the anatomical variation of EIP and its association with the presence of extensor indicis brevis muscle. Results: EIP was found to be absent bilaterally in one incidence associated with unilateral presence of extensor indicis brevis muscle in the right hand of the same cadaver. Conclusions: Appreciation of bilateral absence of EIP associated with unilateral presence of extensor indicis brevis has its surgical implications during tendon transfer and reconstructive surgeries.

KEYWORDS: Extensor indicis proprius, extensor indicis brevis, variations, clinical importance
The tendon of extensor indicis proprius is commonly used in the tendon transfer surgeries, at the same time it is this tendon involved frequently in hand injuries. Hence, a thorough knowledge of extensor tendons of forearm and hand is important from surgical point of view.

Conclusion

The variations in the extensor muscles of forearm and hand must be borne in mind during surgical procedures including tendon graft surgeries.

References


