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Case report

Anomalous bilateral contribution of extensor pollicis longus and muscle fusion of the first compartment of the wrist

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ABSTRACT

Knowledge of the anatomical variations of the muscles of the first dorsal compartments of the wrist is clinically relevant to De Quervain's tenosynovitis and to reconstructive surgeries. In the literature, there are many reports of the presence of multiple insertion tendons in the first dorsal compartment of the wrist, but few reports describe occurrences of fusion and muscle contributions. This case report describes an anomalous bilateral contribution of the extensor pollicis longus. This anomalous contribution was found through a slender auxiliary tendon that crossed laterally under the extensor retinaculum, entered the first dorsal compartment of the wrist and merged with the tendon of the extensor pollicis brevis muscle. In the same cadaver in which this contribution was present, there was atypical muscle fusion of the abductor pollicis longus muscle and extensor pollicis brevis muscle. In conclusion, anomalous bilateral contribution of the extensor pollicis longus muscle and atypical muscle fusion, concomitant with a variant insertion pattern, are the highlight of this case report. Furthermore, it is concluded that additional tendons may be effectively used in reconstructive surgeries, but that there is a need for knowledge of the possible numerical and positional variations of these tendons, with a view to making more effective surgical plans.

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Anômala contribuição bilateral do extensor longo do polegar e fusão dos músculos do primeiro compartimento dorsal do punho

Palavras-chave:
Punho
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RESUMO

O conhecimento das variações anatômicas dos músculos do primeiro compartimento dorsal do punho é clinicamente relevante na tenossinovite de De Quervain e nas cirurgias reconstrutivas. Na literatura encontram-se inúmeros relatos da presença de múltiplos tendões de inserção no primeiro compartimento dorsal do punho, mas são poucos os relatos que descrevem a ocorrência de fusão e de contribuições musculares. Este relato de caso descreve uma contribuição anômala bilateral do extensor longo do polegar. A anômala contribuição foi encontrada por um tendão auxiliar delgado que cruzou lateralmente sob o retináculo dos extensores, entrou no primeiro compartimento dorsal do punho e fundiu-se com o tendão do músculo extensor curto do polegar. No mesmo cadáver foi encontrada a presença dessa contribuição e uma fusão muscular atípica do músculo abdutor longo do polegar (APL) com o extensor curto do polegar (EPB). Em conclusão, a anômala contribuição bilateral do músculo extensor longo do polegar e a fusão muscular atípica, concomitante com um padrão de inserção variante, é o destaque deste relato de caso. Ainda, conclui que os tendões adicionais podem ser efetivamente usados nas cirurgias reconstrutivas e alerta sobre a necessidade de conhecimento das possíveis variações numéricas e posicionais desses tendões, com vistas a planejamentos cirúrgicos mais eficazes.

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Introduction

The tendons of the abductor pollicis longus (APL) muscle and extensor pollicis brevis (EPB) muscle are located in the first dorsal compartment of the wrist. The APL originates in the proximal region of the dorsal surface of the radius, ulna and interosseous membrane, and it follows an inferolateral path and becomes superficial in the distal region of the forearm. There, it divides into two portions, which are inserted in the base of the first metacarpal and the base of the trapezium. The EPB originates in the distal region of the dorsal surface of the radius and the adjacent interosseous membrane and inserts in the base of the proximal phalanx of the thumb.[1]

De Quervain's syndrome is characterized by pain in the region of the styloid process of the radius, coming from stenosing tenosynovitis of the tendons of the APL and EPB, in the region of the first dorsal compartment of the wrist. Variations in the number, length, thickness and insertion pattern of the tendons have been well described in the literature and have an important role in comprehension of the etiology of De Quervain's stenosing tenosynovitis.[2] Therefore, knowledge of the anatomical variations of the muscles of this region is important for surgeons during reconstructive surgery.[3] This case report had the objective of presenting an occurrence of a fused muscle belly of the first dorsal compartment of the wrist and the presence of an anomalous contribution from the extensor pollicis longus muscle with the extensor pollicis brevis muscle.

Case report

During an investigation on occurrences of abnormal muscle fusions of the first dorsal compartment of the wrist, an anomalous bilateral contribution from the extensor pollicis longus muscle was found (Fig. 1). There was an unusual bilateral contribution from a slender auxiliary tendon that crossed laterally under the extensor retinaculum, entered the first dorsal compartment of the wrist and merged with the tendon of the extensor pollicis brevis muscle. In the same cadaver in which this contribution was present, there was anomalous muscle fusion of the APL and EPB (Figs. 1 and 2).

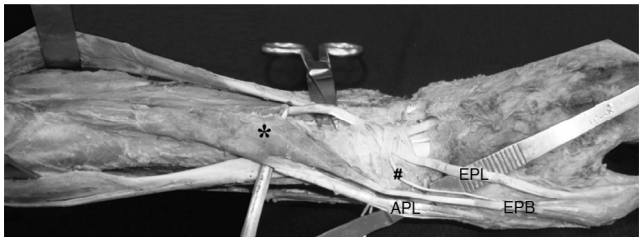

Fig. 1 – Photo showing the left forearm in pronated position. * denotes fused muscle belly of the abductor pollicis longus and extensor pollicis brevis. EPL, extensor pollicis longus; EPB, extensor pollicis brevis; #, auxiliary tendon; APL, abductor pollicis longus.

Morphological characteristics such as length and width were described by using the reference points of the standard muscle origin and insertion. Anthropometric measurements were made by positioning a string passively on the tendons and muscle bellies, and the dimensions were confirmed by means of universal digital calipers (Mitutoyo®), with precision of 0.05 mm. The measurement technique was carried out by the same evaluator, who made three consecutive measurements. The mean of the values obtained was used.

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