

Extensor Digitorum Brevis Manus: A Rare Case Report

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Abstract

The awareness of variant muscle bellies and tendons in the hand is of great interest to the hand surgeons. The knowledge of these muscles is useful for both in teaching human anatomy and in clinical practice; while performing the hand surgeries and tendon transplants. In routine dissection an accessory muscle. i.e. extensor digitorum brevis manus was observed that was attached on the proximal phalanx of middle finger.

Keywords: Hand; Dorsum; Accessory muscles

Introduction

The dorsum of hand contains only the tendons of the extensor muscles of the forearm and devoid of muscle bellies. The tendons present on dorsal surface are- Extensor pollicis longus, Extensor indicis, Extensor digitorum and Extensor digiti minimi. However, muscles and tendons with anatomic variations in dorsum musculature of hand have been reported in numerous publications: they are the extensor digitorum brevis manus (EDBM, reported in 1-3% cases) [1], accessory abductor digiti minimi (present in 24% of cases), extensor medii proprius (present in 0.8-10.4% of cases) [2]. These muscles may be difficult to diagnose and easily mistaken for ganglion, synovial tumour or soft tissue tumours.

Case Report

A variant muscle was found on the dorsal surface of hand of a 65-year-old Indian female cadaver during routine dissections for undergraduate medical students in the Anatomy Department, PGIMS, Rohtak. This variant muscle is extensor digitorum brevis manus which proximally attached deep to the extensor retinaculum on lower end of radius, radiocarpal ligament and the wrist joint capsule and distally it is attached on base of the proximal phalanx of middle finger on the medial side. It is supplied by posterior interosseous artery and by a branch of posterior interosseous nerve (Figure 1).

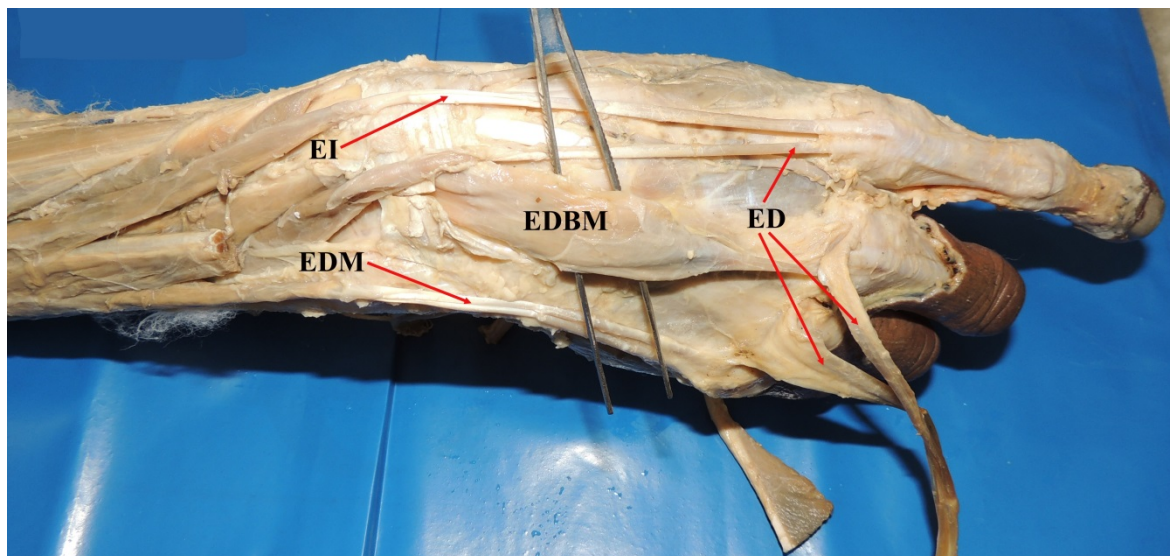


Figure 1: Showing the origin and insertion of extensor digitorum brevis manus muscle (EDBM). Other Muscles shown are Extensor Indicis (EI), Extensor Digitorum (ED) and Extensor Digiti Minimi (EDM).

Discussion

The extensor digitorum brevis manus is an anomalous muscle that takes origin from the lower end of radius, radiocarpal ligament, or the lower end of ulna [3]. The tendon inserts into the index finger or, less commonly, into the middle finger. Another author describes its origin from the lower end of radius, radiocarpal ligament and the capsule of wrist joint, and insertion into either the extensor expansion of the second, third or both the second and the third digit [4].

Paraskevas found the EDBM on the dorsal surface of the right-hand. He noted the origin of this variant muscle deep to the extensor retinaculum from the wrist joint capsule and insertion into the medial side of the base of the proximal phalanx of the index finger [5].

The first description of this anomalous muscle is given by Albinus in 1734 and Nakano found approximately 295 cases in his extensive bibliographic review [6]. Bunnell [7] and Souter [8] reported that EDBM represents a failure of the proximal migration of ulna-carpal elements of forearm muscle mass in humans, but in amphibians this muscle controls the digits. Stith and Browne described that this muscle can be present with two bellies of different sizes [9]. Rodriguez-Niedenführ reported 3 cases of EDBM out of 128 cadavers studied [10].

AV Ranade studied 72 cadavers out of which EDBM was found in 3 cadavers. They defined its origin from the lower end of the radius, radiocarpal ligament, and wrist joint capsule and inserted on the tendon of the extensor digiti medii proprius [11].

Conclusion

The extensor digitorum brevis manus located on the dorsal surface of the hand is asymptomatic but the symptoms like pain and swelling may appear due to repeated work of hand or heavy manual work. It can cause local discomfort or tendon dysfunction. It can be mistaken

for a ganglion or other tumor by clinicians [4]. It can be treated surgically by resection of EDBM or by releasing extensor retinaculum. Thus, the knowledge of this dorsal muscle variant is critical for surgeons [12].

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