

A rare anatomical variation of the origin and insertion of the extensor pollicis et indicis communis muscle

Derek T. George¹, Travis Tuck MS¹, Samuel P. Prahlow MPH¹, Cody Hyatt¹, Leslie McIntosh, PhD¹
¹Department of Biomedical Sciences, Philadelphia College of Osteopathic Medicine

ABSTRACT

The extensor compartment of the forearm is a site with frequent anatomic variation that are encountered during examination with radiologic imaging, surgery, and general cadaver dissections. While many of these variations involving the tendons or additional musculature have been described in different literature, the prevalence of the extensor pollicis et indicis communis (EPIC) remains at 0.5 to 4% in the global population (4). Our group at PCOM South Georgia encountered this anatomical variation during a routine dissection of 12 cadavers obtained through the body donor program at PCOM Georgia. While performing dissection of the forearm, the extensor pollicis et indicis communis muscle was encountered on the posterior aspect of the right forearm between the extensor pollicis longus and extensor indicis. The muscle belly has a proximal insertion on the proximal ½ of the ulna and a distal insertion on the proximal phalanx of the pollex as well as the indicis. This case study aims to describe this rare variation as knowledge of the extensor pollicis et indicis communis is paramount in avoiding and preventing injury during a surgical intervention of the hand and wrist.

INTRODUCTION

The prevalence of EPIC is 0.5-4% within the global population (4). This anatomical variation was found during a routine dissection within the extensor compartment of our donor's right arm.

The origin and insertion of the muscle as well as tendon lengths were documented after this discovery was made during dissection (Table 1).

RESULTS

Origin	Proximal ½ of the ulna	
Insertions	Proximal phalanx of pollex Distal phalanx of indices	
Length of Muscle Belly	5.72 cm	A -> B
Length of Tendon: Muscle Belly to Bifurcation	7.62 cm	B -> C
Bifurcation to Pollicis Insertion	8.26 cm	C -> D
Bifurcation to Indices Insertion	12.70 cm	C -> E

TABLE 1: Characteristics of EPIC

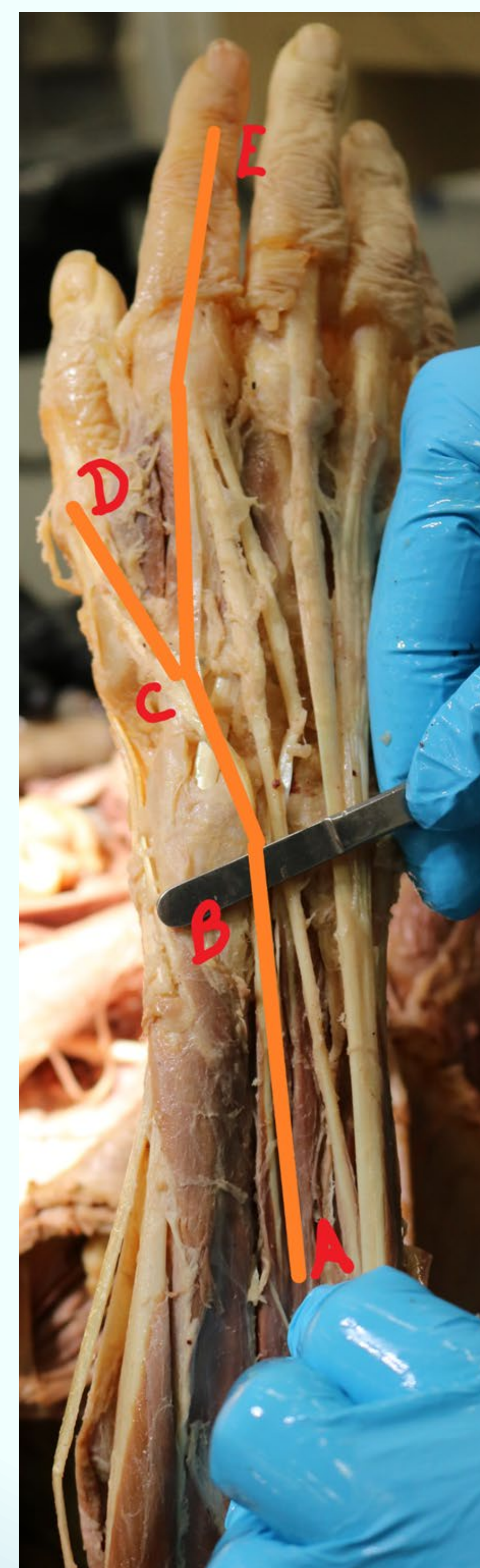


FIGURE 1: Image of extensor pollicis et indicis communis muscle with highlight showing origin, insertion, and points added for Table 1.



FIGURE 2: Image of extensor pollicis et indicis communis muscle.

DISCUSSION & CONCLUSIONS

It is important to describe the anatomical variations in extensor muscles of forearm and hand that are observed in modern human populations. The key findings in this case study include:

- Prevalence of the EPIC is anatomically important in radiographic imaging as well as during surgery
- This EPIC variation was only present in 1 out of 12 cadavers.
- The EPIC origin and insertion is typically on the distal ⅓ of the ulna
- Other related variations have been reported in the medical literature (1-3).

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