

STUDY OF EXTENSOR DIGITORUM BREVIS MANUS MUSCLE IN SOUTH INDIAN POPULATION

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ABSTRACT

Introduction: The extensor digitorum brevis manus (EDBM) muscle is an abnormal muscle originate on the dorsum of the wrist and hand. According to earlier reporters EDBM may originates from various sources like the distal row of the carpal bones or metacarpal bases. The capsule and ligaments of the wrist joint [2] and the dorsum of carpal bones.

Aim of the study is to know Prevalence of variant extensor digitorum brevis manus muscle in dorsum of hand in adult cadavers in south Indian population.

Materials and Methods: Present study carried out with 60 upper limbs to find out the anomalous extensor digitorum brevis manus muscle.

Results: out of 60 cases, study found 2 numbers of variations, one on right and one on left side, incidence was 3.3% in south Indian population.

Conclusion: Study May useful to hand surgeons and radiologists for the proper diagnosis and treatment.

KEY WORDS: Extensor Digitorum Brevis Manus, Posterior Interosseous Nerve, Upper Limb.

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INTRODUCTION

The extensor digitorum brevis manus (EDBM) muscle is an abnormal muscle originate on the dorsum of the wrist and hand. According to earlier reporters EDBM may originates from various sources like the distal row of the carpal bones or metacarpal bases [1]. The capsule and ligaments of the wrist joint [2] and the dorsum of carpal bones [3]. According to Ogura T [4].

EDBM has been classified into 3 types, type 1 the EDBM tendon inserted onto the dorsal aponeurosis of the index finger, as would the EIP (Extensor Indicis Proprius) although it was absent. Type 2, both the EIP and EDBM inserted on the index finger. Type 2 was further classified into three subtypes. In type 2a, the tiny or vestigial EIP arose from the ulna but was confluent with the EDBM belly, which inserted on the index finger. In type 2b, the distal end of

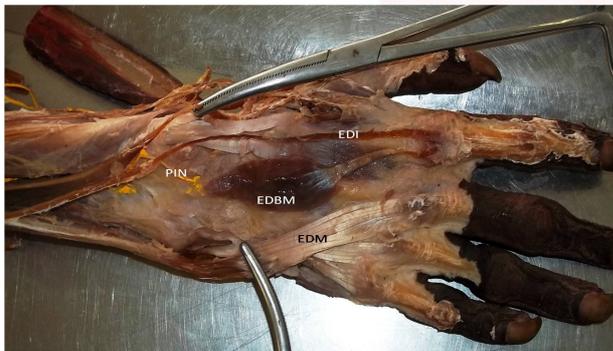
the EDBM belly joined with the EIP tendon. In type 2c, the EIP inserted normally, but the thin EDBM tendon also inserted more ulna side than the EIP tendon, often with a membranous accessory slip, which inserted on the long finger. In type 3, the EIP inserted on the index finger, but the EDBM inserted on the long finger, with or without an accessory EIP to the long finger.

MATERIALS AND METHODS

Present study conducted with a 60 number of formalin fixed upper limbs to find out the prevalence of extensor digitorum brevis manus muscle on dorsum of the hand. Study was conducted in the department of anatomy at Narayana Medical College, Nellore, Andhra Pradesh, India and Fathima institute of medical sciences, Kadapa, Andhra Pradesh, India. Upper limbs were dissected and exposed the posterior compartment of fore arm and hand according to the standard methods described by Romanes in cunnighams manual of practical anatomy. Origin and insertion and measurements of variant presence of extensor digitorum brevis manus muscle were recorded.

RESULTS

Fig 1: Shows right dorsum of hand.

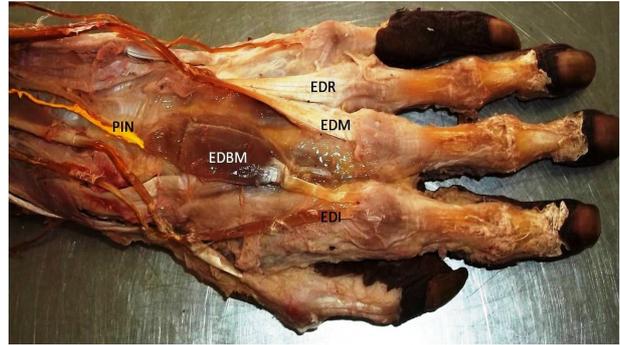


EDBM: Extensor Digitorum Brevis Manus, **EDM:** Extensor Digitorum Middle, **EDI:** Extensor Digitorum Index, **PIN:** Posterior interosseous Nerve.

Present study concluded that the anomalous appearance of EDBM was seen in 2 limbs out of 60 cases, one on right side (Fig. 1) and other on left side (Fig. 2). Both cases EDBM originates from capsule and ligaments of the wrist joint and inserted as a single tendon into the dorsal expansion, ulnar side of the index finger. It was 5 cm in length in both sides and originates as muscle belly inserted as tendon. Anomalous EDBM were innervated by Posterior interosseous

Nerve. The incidence of this anomaly is 3.3 % in south Indian population.

Fig. 2: Shows left dorsum of hand.



EDBM: Extensor Digitorum Brevis Manus, **EDM:** Extensor Digitorum to Middle, **EDI:** Extensor Digitorum to Index, Extensor Digitorum to Ring, **PIN:** Posterior interosseous Nerve.

DISCUSSION

The extensor digitorum brevis manus muscle is a rare anomaly and according to previous studies, the incidence was varied from 1% to 10% [5-7]. About 30% of cases it was Bilateral [8]. According to EDBM development in humans, it represents a failure of proximal migration of the ulna carpal elements of the ante brachial muscle mass [9]. Kaplan [10] represented that EDBM anomaly was a homologue of the extensor digitorum brevis of the foot. Qing Hua Mao [11] noticed bilateral Extensor digitorum brevis manus with X tendons in 72 year-old Chinese male cadaver. According to el-Badawi MG [12] anatomical studies EDBM was noticed with the absence of extensor indicis muscle. Present study is similar to the study of el-Badawi MG that absence of extensor indicis muscle with the association of EDBM. Presence of EDBM is usually misdiagnosed as ganglion or a benign soft tissue tumor because it is asymptomatic [13].

CONCLUSION

Anatomical knowledge and existence of EDBM may useful to hand surgeons to avoid confusion, misdiagnosis and unnecessary treatment. EDBM may suggest as a tendon graft transfers to re establish malfunctioning muscles.

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Conflicts of Interests: None

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