ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 5, Issue, 07, pp.1895-1896, July, 2013

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

CASE STUDY

MULTIPLE TENDONS OF EXTENSOR POLLICIS BREVIS

***Sabnis Anjali, S.**

Department of Anatomy, K. J. Somaiya Medical College, Mumbai

ARTICLE INFO

Article History:
Received 25th April, 2013
Received in revised form
17th May, 2013
Accepted 09th June, 2013
Published online 18th July, 2013

Key words:
Extensor pollicis brevis,
Multiple tendons,
Muscles of thumb,
Extensors of thumb.

ABSTRACT

During routine cadaver dissection of dorsal aspect of hand of 54 and 60 years of male, multiple tendons of Extensor Pollicis Brevis (EPB) were found on right and left side respectively. On the other side EPB maintained the normal anatomy. Variations in muscles of thumb have always attracted hand surgeons as they can be used for tendon transfer. Surgery and physiotherapy point of view multiple tendons of EPB are important. The clinical significance and embryological basis of multiple tendons of EPB is discussed.

INTRODUCTION

EPB arises from posterior surface of the radius distal to the abductor and from the adjacent interosseous membrane and inserted on dorsolateral base of the proximal phalanx of the thumb[1].Team work of all long muscles and small muscles of thumb makes possible to achieve smooth and skillful functioning of thumb. EPB is one of the long muscles which causes extension of CMC and metacarpophalageal joint. Varia
tions are seen in relation to origin, insertion, number and nerve supply of EPB. Supernumerary tendons are important during surgeries involving tendon transfer and or repair. We present two cases where multiple tendons of EPB were found and insertion was seen on the base of the 1st metacarpal bone instead of base of proximal phalanx unilaterally.

Cases

On the right side (Fig: 2) of hand of 54 years old and left side of 60 years of male cadaver seven and five tendons (Fig: 1) of EPB were seen respectively. EPB was arising from posterior surface of the radius distal to the abductor pollicis longus and from the interosseous membrane and inserted on dorsolateral base of the 1st metacarpal instead of base of proximal phalanx of thumb. All tendons were thin and running parallel to each other. APL maintained normal anatomical structure and both the muscles are supplied by posterior interosseous nerve.

DISCUSSION

Wide literature is available regarding variation in origin, insertion, branching of tendons and presence of accessory tendons of EPB. The numbers of extensor pollicis brevis tendons in the first compartment varied from one to three [2]. The EPB had a single tendon in 133 limbs, double tendons in 17 limbs [3, 4, 5], triple tendons in only 6 limbs out of 156 upper limbs[3] and accessory tendons in 4% of cases[5]. Concerning the EPB tendon, a single slip is the common aspect [3], two slips are present in only 3% of the cases [6-9]. We have found seven tendon slips of EPB (Fig: 2) in one case and five tendon slips (Fig: 2) in other case.

Corresponding author: Dr. Anjali sabnis
Department of Anatomy, K. J. Somaiya Medical College, Mumbai

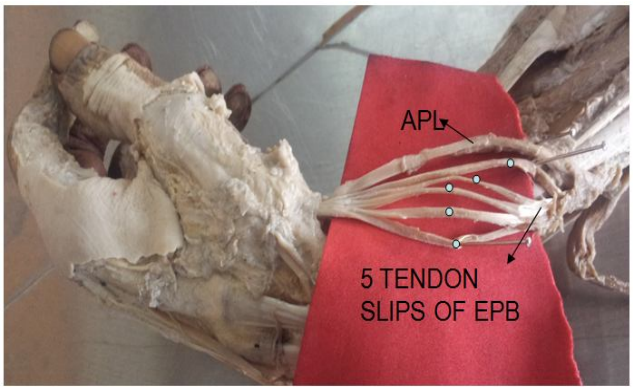

Fig 1: APL and 5 tendon slips of EPB on left side

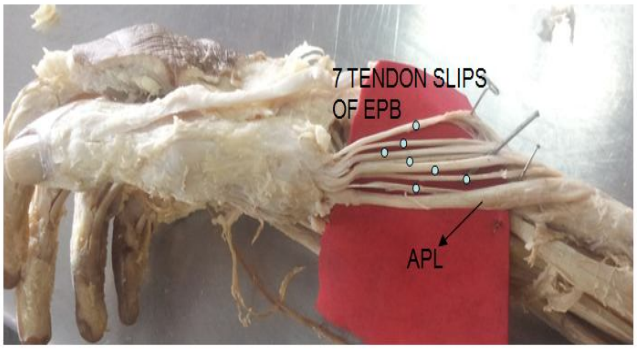

Fig 2: APL and 7 tendon slips of EPB

Presence of multiple tendons may alter the kinematics around the site of attachment to the phalanx[10]. The number, thickness and length of such accessory tendons have a functional significance in the development of de Quervain's stenosing tenosynovitis[11]. de Quervains disease is caused by stenosing tenosynovitis of 1st dorsal compartment of the wrist which includes the tendons of APL & EPB. Patient

usually complains of pain at the dorsolateral aspect of wrist radiating towards the thumb or lateral forearm [12]. Overuse of hand tendons leads to de Quervain's disease 13. EPL, EPB are more likely to be involved in tendovaginitis[14]. Tenosynovectomy in de Quervain's disease gives good result[15]. Variation in the number of EPB tendons and site of insertion should be taken into consideration by clinicians and surgeons when performing surgical decompression of the first extensor compartment of the wrist in de Quervain's syndrome. Proper recognition of the presence of accessory tendons is of great importance. Decompression of the main osseo-fibrous canal may not relieve the symptoms if accessory tendon remains unrecognized and left compressed [4].Surgical failure is common [4] and it may occur due to overlooking variations in EPB tendons or septation of the first extensor compartment[3]. Usually EPB is inserted on base of proximal phalanx. Insertion is seen on 1st metacarpal bone in 4% of cases[16]. In both the cases we have found that insertion of EPB was on base of proximal phalanx instead of 1st metacarpal.

Conclusion

Such multiple tendons in EPB should not be ignored rather attention should be drawn to them as morphological variations are important for hand surgeons performing tendon transfer and reconstructive surgery.

REFERENCES

1. Grays Anatomy Susan Stanrmy, Grays Anatomy, 39th edition, Philadelphia: Churchill Livingstone; 2004, 851-852
2. Shiraishi N, Anatomical variations of the extensor pollicis brevis tendon and abductor pollicis longus tendon--relation to tenosynovectomy, Okajimas Folia Anat Jpn, 2005, 82 (1), 25-9.
3. Soubhagya R, Variation and clinical significance of extensor pollicis brevis: a study in South Indian cadavers, Chang Gung Med J, 2009, 32(6):600-4.
4. Giles K. W, Anatomical Variations Affecting the surgery of de Quervain's disease, The J of bone and surgery, 1960, 42B, 2, 353-355
5. Stein A. H, Variations in the tendon of insertion of APL and EPB, Anatomical Record, 1951, 110, 49-55
6. Jackson WT, Anatomical variations in the first extensor compartment of the wrist-A clinical and anatomical study, J Bone Joint Surg Am 1986*;* 68 (*6*) 923–926.
7. Leslie BM, Incidence of a septum within the first dorsal compartment of the wrist. J Hand Surg [Am] 1990, 15*(1):*88–91.
8. Collett D. Modeling binary data. London, England*:* Chapman & Hall, 1991*;* 23–26.
9. Sawaizumi T, De Quervain's disease: efficacy of intra-sheath triamcinolone injection, Int Orthop 2007, 31*(2*):265–268.
10. Shipra Paul, Anomalous Extensor tendons of hand: A case report with clinical importance. Colombia media, 2007,38,2
11. Kulthanan T, Variations in abd pollicis longus & ext pollicis brevis tendons in the Quervains a surgical & anatomical study Scand J Plast Res Surg Hand ,2007;41,38-39
12. Nayak SR ,Multiple supernumerary muscles of arm and its clinical significance Bratisl Lek, Listy 2008;109(2) :74-75
13. Mc- Farland G.B, : In Evart's Sugery of Musculoskeletal system, Vol II, Chapter 20, Entrapment Syndrome, 1983, 524-525
14. Hollinshead W H Anatomy for surgeons, 3rd Edition, vol III, Harper and Row Publishers, Philadelphia 1982.
15. Melling M supernumerary tendons of abd pollicis, Acta Anat (Basel), 1996, 155(4),291-4
16. Joshi S.S, Applied significance of variations of the 1st extensor compartment of wrist, J Anat of Soci of India, 2002, 51(2), 159-161

****