

Table 2: Variation in the nerve supply of the thenar muscles according to the EMG study in the *right* hands (total No. of the hands = 30)

| Muscles (right) | Pure median | Pure ulnar | Mixed |
|---------------------------------|-------------|------------|------------|
| Abductor pollicis brevis | 20 (66.7%) | 0% | 10 (33.3%) |
| Flexor pollicis brevis | 12 (40%) | 0% | 18 (60%) |
| Opponens pollicis | 4 (13.3%) | 2(6.7%) | 24 (80%) |
| Adductor pollicis | 0% | 100% | |

Table 3: Variation in the nerve supply of the thenar muscles according to the EMG study in the *left* hands (total No. of the hands = 12)

| Muscles (left) | Pure median | Pure ulnar | mixed |
|---------------------------------|-------------|------------|-----------|
| Abductor pollicis brevis | 8(66.7%) | 0% | 4(33.3%) |
| Flexor pollicis brevis | 2(16.7%) | 0% | 10(88.3%) |
| Opponens pollicis | 0% | 4(33.3%) | 8(66.7%) |
| Adductor pollicis | 0% | 10(83.3%) | 2(16.7%) |

Discussion

The unsettled issue of the first palmar interosseous muscle

In spite of careful attention through hand dissection to reveal any clue of the first palmar interosseous muscle, it was not detected as a separate muscle in all the dissected hands. In general, a muscle is considered as a separate entity during dissection when it can be easily separated from its surrounding structures. The epimysium that envelopes a muscle can be regarded as a natural boundary that identifies its independent status. For each muscle identified in this study, a clear cleaving fibrous sheath made separation of muscles unambiguous.

To consider the deep stratum of flexor pollicis brevis as a separate muscle^[2] and tag it as the first palmar interosseous is an undesirable assumption. Even though these deep fibers have separate innervations, dual innervations, from the ulnar nerve; it is not a justification to consider them as separate entities.

The human body poses many similar examples as in the case of pectineus muscle (femoral and obturator nerve supply); adductor magnus is yet another example being supplied by the sciatic and obturator nerves; However, neither of these muscles

were considered to be two separate entities, but were considered as a composite muscle on the account that no fibrous cleavage was found between its components.

To consider flexor pollicis brevis muscle as a composite muscle on the account of the above mentioned similarities may be more justified than considering it as two separate muscles. Even this, we suppose, is adopted to cheer supporters of four palmar interossei muscles as opposed to the well established four dorsal interossei muscles.

Furthermore, functionally speaking, the palmar interossei adduct the fingers. Thus the thumb requires no palmar interosseous muscle because of the thumb already possessing its own powerful adductor pollicis muscle.

Palmar neural anastomosis: another alert to surgeons

The palmar anastomosis between median and ulnar nerves at different levels especially the anastomosis in the palm beneath the distal edge of the flexor retinaculum makes this anastomosis vulnerable in the surgical interventions, like the carpal tunnel release. Surgery literature^[16-18] did not bring this issue to the alert of surgeons operating in the palm field.

The high percentage (53.3%) of the presence of anastomosis and the variation in