Tendons of the M. flexor digitorum superficialis in the hand of the house musk shrew, Suncus murinus

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Abstract There are some discrepancies in the anatomical findings for the tendons of the M. flexor digitorum superficialis of Suncus murinus reported in systematic studies conducted by Sharma (1958) and Isomura (1985). In particular, the reports differ in description of extension of the tendons of the M. flexor digitorum superficialis to the digits of the hand. The present anatomical study describes these tendons, and its findings clearly support the description set forth by Sharma.

Bull. Sch. Allied Med. Sci., Magasaki Univ. 4 : 55−59, 1990

Key Words : Suncus murinus, Hand, Tendon to digit, M. flexor digitorum superficialis

Suncus murinus is a species of Insectivora which has now been domesticated[1]. However, there are few systematic reports describing its muscular anatomy other than that by Sharma[2] on the wild Indian variety and that by Isomura[3] on the Japanese laboratory variety. Comparison of these two reports, furthermore, reveals that there are some discrepancies between their anatomical findings. One anatomically important difference is in the differing descriptions of the arrangements of the tendons extending to the digits of the hand from the M. flexor digitorum superficialis. According to Sharma[2], this muscle has three tendons, each of which extends to one of the 2nd to 4th digits, while, conversely, according to Isomura[3], it has five tendons, each extending to one of the 1st to 5th digits.

This paper describes observations for the arrangements of the tendons of the M. flexor digitorum superficialis and the associated muscles of S. mur-

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inus and discusses the accuracy of the two reports cited above. The hands of such small animals as S. murinus are difficult to observe by ordinary dissection[4], so that in this study observations was made on histological serial sectins.

Materials and Methods

Materials consisted of five hands of adult S. murinus bred in the Laboratory Animal Center for Biomedical Research of Nagasaki University. Hands had been fixed in 10% neutral formalin for at least three months. Specimens were decalcified with PLANK−RYCHLO solution, and 50 μm-thick serial celloidin sections were then cut at an orientation perpendicular to the long axis of the hand. Sections were stained with Haematoxylin and Eosin. The muscle nomenclature used herein conforms to that outlined in the Nomina Anatomica Veterinaria Japonica (1978).

Findings

Fig. 1 shows a transverse section at the level of the carpal bones. Three separate tendons (Fds 2−4) of the M. flexor digitorum superficialis (hereinafter referred to as the superficial flexor) which extend to the 2nd to the 4th digits, respectively, are located palmar to the common tendon of the M. flexor digitorum profundus (hereinafter referred to as the profund flexor). The M. flexor digiti V, a term which corresponds to M. flexor brevis digitorum manus as used by Haines[4] and Sharma[2], is found to be in contact with the tendon of the superficial flexor having its insertion in the 4th digit. Furthemore, the M. abductor digiti V is located at the base of the 5th finger.

Fig. 2 shows a transverse section at the level of the head of the 1 st and the midshafts of the 2nd to 5th metacarpal bones. At this level, the profund flexor has five tendons extending into each of the 1 st to 5th digits. Each of three tendons of the superficial flexor is found to be located just palmar to the corresponding tendon of the profund flexor. Tendons of the superficial flexor extending to the 1 st and 5th digits are not found; rather the tendon of the M. flexor digiti V originating from the carpal bone and extending to the 5th digit accompanies one of the tendons of the profund flexor. The findings reported in this study therefore support the description by Sharma[2].

Acknowledgements

The author wishes to express his gratitude to Dr. Masanori Sumi for providing the animals.

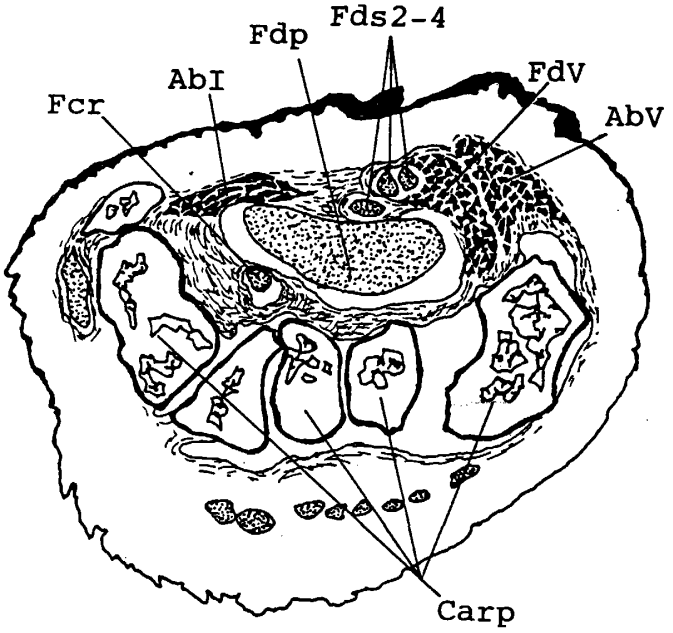

Fig. 1 Transverse section of the hand at the level of the carpal bones.

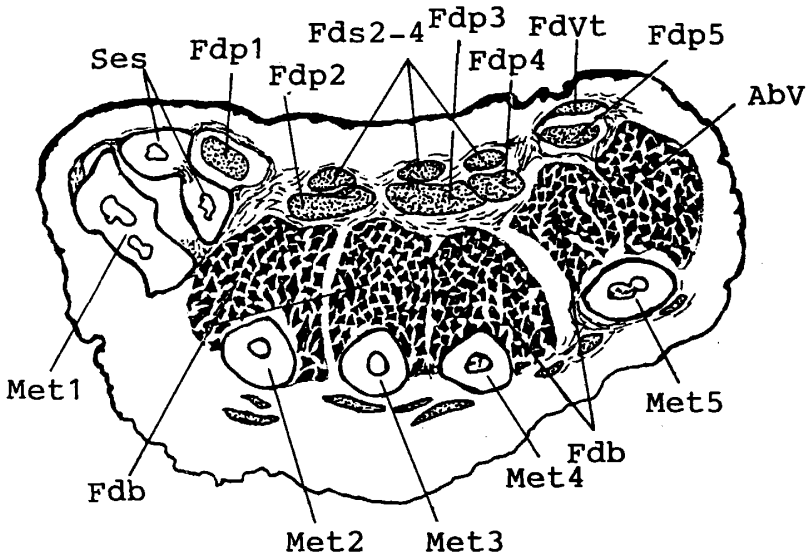

Fig. 2 Transverse section of the hand at the level of the head of the 1st and the midshafts of the 2nd to 5th metacarpal bones.

Key to reference lettering on figures

AbI: M. abductor pollicis brevis
AbV: M. abductor digiti V
Carp: Carpal bones
Fcr: Tendon of M. flexor carpi radialis
Fdb: M. flexor digitorum brevis
FdV: M. flexor digiti V
FdVt: Tendon of M. flexor digiti V
Fdp: Common tendon of M. flexor digitorum profundus
Fdp1−5: Tendons to 1 st to 5th digits of M. flexor digitorum profundus
Fds2−4: Tendons to 2nd to 4th digits of M. flexor digitorum superficialis
Met1−5: 1 st to 5th Metacarpal bones
Ses: Sesamoid bones

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(1990年12月28日受理)

スンクス（ジャコウネズミ）の手における浅指屈筋の腱について

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要　旨　　スンクスにおける筋系のまとまった解剖学的研究はSharmaおよび磯村によってなされている．両研究の間で解剖所見の一致しない浅指屈筋の指に至る腱の配列について，連続セロイジン切片から若干の観察を行った．その結果はSharmaの解剖所見を支持する．

長大医短紀要4：55－59，1990