HABITUAL DISLOCATION OF THE DIGITAL EXTENSOR TENDONS

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WHEN the fingers are flexed the extensor tendons can be seen to stand out on the rounded heads of the metacarpal bones. Each tendon rests accurately on the apex of the smooth cartilage-covered surface of the bone-end, without any tendency to slide off. The tighter the fist is clenched, the more securely the tendon holds its position. The principal mechanism holding each tendon in place is its adhesion to the capsule of the metacarpophalangeal joint. The intertendinous tissues on the dorsum of the hand also help to hold the tendons in their position, principally through the juncturae tendinum, which are constantly present over the two lateral interosseous spaces, uniting the tendons of the middle, ring, and little fingers. The extensor expansions on the dorsum of each proximal phalanx also assist in keeping each tendon in its proper alignment.

The efficiency of this retaining mechanism is attested by the rarity of reports of habitual displacement. One would expect that pugilists would be likely to suffer from dislocation of tendons on the knuckles, but if such is the case no reports have been placed on record. Krukenberg[1] first wrote of the condition, in 1890. Haberern,[2] in 1902, gave a description of a case, with an operation for its cure, by constructing a restraining sheath from the subcutaneous tissues and strips of the capsule of the metacarpophalangeal joint. Reports by Paget, Legouest and Howard Marsh were mentioned in this paper. In 1921, Levy[4] collected six cases from the writings of others, and added four of his own. He recognized pathologic, traumatic, and hereditary types, and approved of the Haberern operation.

Case Report.—On September 10, 1936, a young woman, age 22, stenographer, complained that she was unable to use her left hand in operating a typewriter on account of pain in the forearm, associated with slipping of the extensor tendons from the heads of the metacarpal bones whenever the fingertips were pressed on the keys.

Two years previously she had first noticed that the tendon of the index finger slipped off the head of the bone toward the ulnar side whenever the fist was clenched. This sliding of the tendon was always accompanied by an unpleasant sensation passing upward into the forearm. Three weeks before coming for advice, the tendon of the middle finger began to slip in an ulnar direction, and the pain became worse. A fortnight later the tendons of the ring and little fingers became similarly displaced. There was a boring pain, deep in the extensor muscles of the forearm, the hand felt cold, and perspired freely. She obtained relief by allowing the hand to hang loosely by the side. No relative of the patient had ever suffered from a similar condition.

Physical Examination.—There was slight wasting (½ cm. in circumference) in the arm and forearm. There was no displacement of the tendons when the interphalangeal joints were flexed with the metacarpophalangeal joints extended; neither was there any slipping when the metacarpophalangeal joints were flexed while the interphalangeal

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were kept straight. But when all three joints were flexed the tendons slid off the heads of the bones with a visible jerk, associated with an irritating sensation of deep soreness in the forearm.

The tendons of the index, middle, and little fingers always went to the ulnar side; that of the ring finger to the radial side of the corresponding bone (Fig. 1). The tendons slid abruptly back into position as soon as extension was begun.

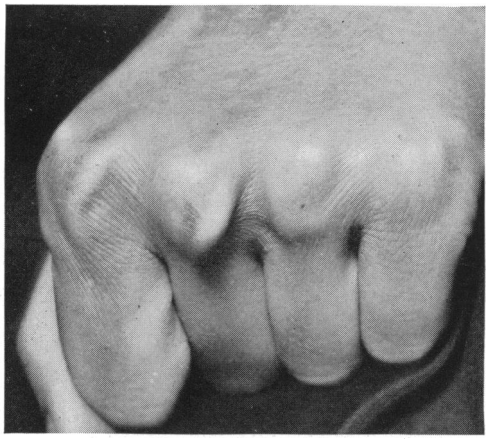

FIG. 1.—Before operation: The tendons of the index, middle, and little fingers are displaced toward the ulnar side of the head of the corresponding metacarpal. That of the ring finger has slid off in a radial direction. Pain was felt in the forearm.

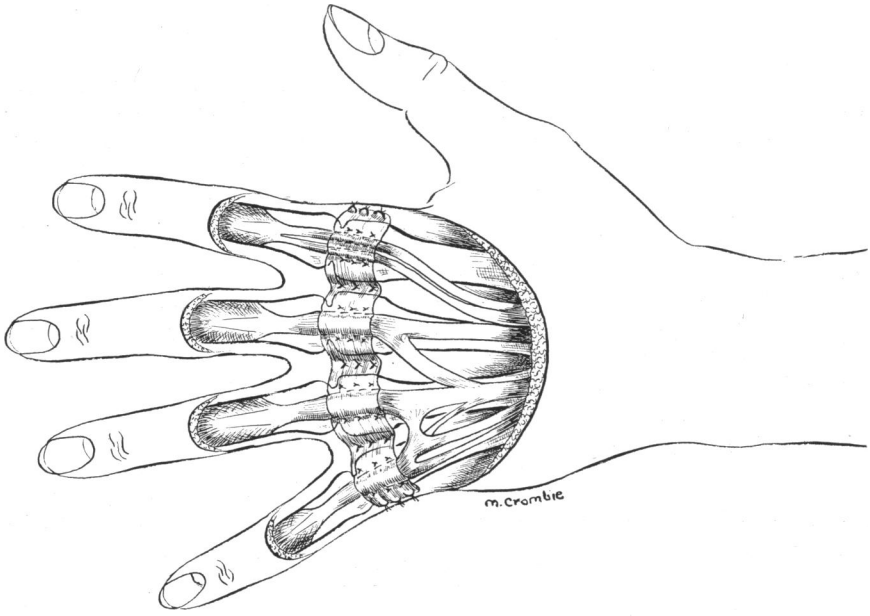

FIG. 2.—Method of fixing the fascial strip in position. Note that the common extensor expansions are absent over the upper part of the proximal phalanx.

Operation.—September 29, 1936: Under general anesthesia, a strip of fascia lata 12 cm. long and ½ cm. wide was removed from the outer side of the right thigh. Three longitudinal incisions were then made over the interosseous spaces and continued distally along the dorsum of the index, ring, and little fingers. The extensor

tendons had a normal attachment to the fibrous capsule of the joint. Juncturae tendinum were seen to be present. The common extensor aponeurosis, however, did not appear to extend as far proximally as usual. In a normal hand the proximal edge of the extensor expansion is situated at the metacarpophalangeal joint line, and in fact, in hyperextension it slips over a part of the metacarpal head and partly covers its articular

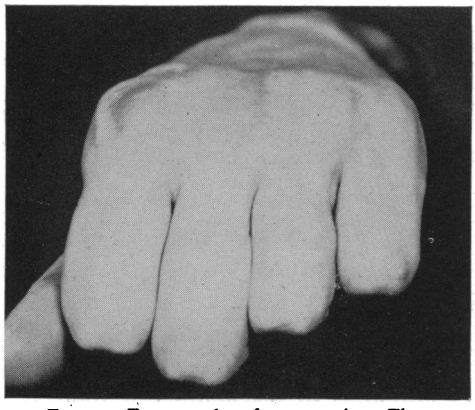

FIG. 3.—Two months after operation: The scars are visible, and the tendons remain in place on flexion. No pain. (The ridge on the radial side of the head of the index metacarpal is due to a distended vein.)

surface. In some dissections it blends with the capsule of the metacarpophalangeal joint. Apparently, in the instance here described, it was the absence of this usually well developed proximal part of the common extensor aponeurosis that permitted the tendons to slide off the smooth heads of the bones during flexion of the digits.

The strip of fascia lata was anchored to the periosteum on the radial side of the head of the index metacarpal with silk sutures. It was also anchored to the transverse ligament of the heads of the bones between each pair of metacarpals, and to the periosteum on the ulnar side of the fifth metacarpal. Fine sutures were then placed along both sides of each tendon, anchoring the strip of fascia lata down to the joint capsule. At the close of the operation each tendon was held down to the fibrous joint capsule in a tunnel of fascia lata, which in turn was fastened to each side of the deeper tissues (Fig. 2). The skin was closed with fine silk sutures. The wounds healed by primary union, and exercises were begun in ten days (Fig. 3).

Follow-Up.—On November 20, 1936, the patient returned to her work as a stenographer, and ever since that date she has been able to type at the same speed as before. The pain has completely disappeared. The tendons remain in place on all movements. The range of movement of the metacarpophalangeal joints is two-thirds that of normal; that of the interphalangeal joints is normal.

SUMMARY

In a patient with habitual dislocation of the digital extensor tendons, dissection at operation showed that the proximal edge of each common extensor expansion was placed a little further distally on the proximal phalanx than is usually the case. This anatomic fact is offered as an explanation of the dislocation. An operation for the cure of the condition is described.

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