CHRONIC NON-SPECIFIC TENDOVAGINITIS
OF TIBIALIS POSTERIOR

ROBIN WILLIAMS, MELBOURNE, AUSTRALIA

From the Royal National Orthopaedic Hospital and the Institute of Orthopaedics, London, England

Non-specific tendovaginitis is a common cause of pain and disability, especially in relation to the wrist and ankle and to the proximal parts of the flexor sheaths of the fingers. Many papers have been written describing the condition in general and the features when particular tendon sheaths are involved, but few accounts have concerned the tendon of the tibialis posterior.

Lapidus and Seidenstein (1950) referred to the first time this condition was described by Kulowski in 1936 and reported three patients with effusion into the tendon sheath. Lipscomb (1950) stated that this sheath was involved in 16 per cent of a series of patients he reviewed. Short accounts are given in the text-books of Campbell (1956) and DuVries (1959). There are reports of the condition being associated with reduplication of the tendon (Ghormley and Spear 1953) and with partial rupture (Key 1953). Fowler (1955) mentioned notable enlargement of the lower part of the tendon, and the fact that some of his histological sections showed deposits of haemosiderin in the synovium raised the possibility that the condition could be due to recurrent haemorrhage into the sheath. Burman (1953) found calcaneo-navicular synostosis in one patient and fracture of the sustentaculum tali in another.

MATERIAL

This paper is based on a review of fifty-two patients who attended either the Royal National Orthopaedic Hospital or Bridgend General Hospital during the last ten years. Twenty-two male and thirty female patients are included. The youngest was aged nine years and the oldest seventy-four. Most of the patients were between forty and sixty years of age.

CLINICAL FEATURES

Pain on the inner side of the ankle was the presenting symptom; the patient would usually indicate an area below and behind the medial malleolus. The onset of pain was usually gradual, but a few patients recalled an instance of strain or a period of unusual activity. Long standing and walking were aggravating factors. The pain was seldom so severe that it was disabling and usually it had been present for a few months before the patient sought advice.

On examination, swelling and tenderness were always found around the lower part of the tendon. In several patients swelling was severe (Fig. 1) and fluctuation could be elicited: one patient had palpable crepitus on active movement. Usually active inversion and passive eversion caused pain. A plano-valgus deformity was often present but rarely severe.

Investigations—Radiographs were taken of the ankles and feet in thirty-one patients. There was osteoarthritis of the tarsal joints in four feet, irregularity of the floor of the groove in which the tendon runs in two (Fig. 2) and an accessory navicular bone in one. Otherwise the bones and joints appeared normal.

The erythrocyte sedimentation rate was estimated in twenty-six patients and was raised in three. One had the changes of rheumatoid arthritis in the hands and another later developed ankylosing spondylitis, but in the third no cause could be found. Rose's test, blood uric acid estimation and blood cell counting were seldom done, but, when they were, the results were normal.
TREATMENT

Various conservative measures were tried. Restriction of activity, arch supports, foot baths, plaster-of-Paris, calipers with T-straps, and injections of hydrocortisone were prescribed.

The latter relieved some patients but no more than three injections were given to any one patient (Hauser 1956).

Most patients were relieved of their symptoms after some months of conservative treatment, but twelve, in whom pain and swelling persisted, were treated by operation. The
fibrous and synovial sheaths of the tendon were divided longitudinally behind and below the medial malleolus and the edges of the sheath were either left separated, or, less often, partly excised.

All wounds healed by first intention and dislocation of the tendon did not occur. With one exception, an elderly woman, the pain was relieved after two or three weeks. The swelling, however, took longer to resolve, and sometimes lasted for several months.

PATHOLOGY

The appearances, with only slight variations, were similar in all patients. Macroscopically, the fibrous flexor sheath was thickened and oedematous (Fig. 3). There was no evidence of a localised constriction as is seen in De Quervain's disease. The thickened synovium occasionally showed villous proliferation and was abnormally vascular. Sometimes an effusion of yellow synovial fluid was present, or the tendon was swollen and bulged out of the fibro-osseous canal when the sheath was incised. There was roughening of the tendon in one patient in whom there was bony irregularity of the floor of the groove on the tibia (Fig. 4), but usually the fibrocartilage lining the groove was normal.

Microscopically, the appearances were those of a non-specific synovitis. The tissues were oedematous and the synovial layer of the sheath showed cellular proliferation with collections of small round cells. Small deposits of haemosiderin were seen in a few sections. The fibrous part of the sheath showed no particular feature except that in the more florid examples the collagen bundles were thicker and the cells larger than normal. The histological appearance was never that of villonodular synovitis (Sherry and Anderson 1955).

DISCUSSION

From a study of these patients and the reports of others the etiology of the condition is not clear. While it is apparent that in some patients mechanical factors are responsible, this does not apply to all. Damage to the tendon or its fibro-osseous tunnel obviously can interfere with its smooth running, but it is difficult to believe that slight postural alterations can cause a similar effect when the many excursions tendons make under strain in the course of athletic activities and heavy labour are considered. Lipscomb (1950) has calculated that human tendons can tolerate up to fifteen hundred excursions an hour. Again, if a faulty posture such as plano-valgus is the cause it is difficult to understand why division of the fibrous sheath away from the side of stress on the bone should be so efficacious.

Ghormley and Spear (1953) found, at four out of eleven operations, that the tendon was composed of more than one strand, but this was not observed in the twelve patients operated upon in this series. If this condition is compared with De Quervain's disease the cause cannot be reduplication of the tendon within the sheath, because anatomical studies have shown that, in as many as 79 per cent of specimens, the tendon of abductor pollicis longus is composed of two or more strands (Keon-Cohen 1951, Leão 1958).

Non-specific inflammatory disorders of tendon sheaths are often considered to be manifestations of rheumatoid arthritis, but in this series of fifty-two there was this association in only one patient. In support of the contention that this particular disorder is not rheumatic in nature it is interesting that Potter and Kuhns (1958) state that they have not seen rheumatic affections of tendons unaccompanied by articular symptoms, although Jacobs, Hess and Beswick (1957) describe three cases in which lesions of tendon sheaths in the hands preceded articular symptoms. In the eight patients in this series from whom synovial tissue was taken and examined histologically the changes were non-specific. This, with the normal sedimentation rates and the absence of other changes, indicates that, with one possible exception, rheumatoid arthritis was not the cause in this series.
One conclusion seems reasonable. Once non-specific tendovaginitis of the tibialis posterior develops, the condition is likely to persist until measures are taken to break the cycle. When conservative treatment fails, free division of the sheath almost certainly will succeed.

SUMMARY

1. Fifty-two patients with chronic tendovaginitis of the tendon of the tibialis posterior have been reviewed. With one exception the changes were regarded as non-specific.
2. Twelve patients in whom conservative treatment failed were treated by division of the tendon sheath, with complete relief in eleven.

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REFERENCES