SUBCUTANEOUS RUPTURE OF THE TENDON OF PERONEUS LONGUS

Report of a Case

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A labourer aged twenty attended the Wythenshawe Hospital, Manchester, on account of a recurrent painful swelling at the outer aspect of his left heel. He related the pain and swelling to a football injury eight months previously: while his left foot was fixed to the ground by the weight of another player, he was knocked over and the foot was forced into sudden inversion. Pain prevented his continuing the game, but it was relieved by a firm support applied soon afterwards. The injury was regarded as a strain and was treated by rest in a plaster for six weeks.

Examination revealed a fluctuant swelling one and a half inches across, below and behind the lateral malleolus. The ankle and foot showed a full range of movement. Dorsiflexion and plantarflexion were of normal power but eversion was weaker than normal and was painful. The radiograph (Fig. 1) showed a large peroneal sesamoid but no other abnormality. A diagnosis of tenosynovitis of the peroneal tendon sheath was made and exploration advised.

Operation—At operation the sheath of the peroneus longus tendon was found to be distended and to contain copious xanthochromic fluid. The tendon showed a bulbous swelling one and a half inches long and half an inch in diameter just below and behind the lateral malleolus. The swelling was adherent to the sheath on its deep aspect. The swollen section was excised and the proximal and distal ends of the peroneus longus tendon were sutured to the adjacent tendon of peroneus brevis.

After the operation the ankle was immobilised in plaster for six weeks, walking being allowed. The patient returned to work two weeks after the plaster was removed. Two months later he had no symptoms and the ankle and foot had an almost normal range of movement.

Pathology—The resected part of the tendon showed a ragged transverse break in continuity
(Fig. 2). Microscopy showed necrosis at the site of the rupture with exudate and fibroblastic proliferation in adjacent tissue (Fig. 3).

DISCUSSION

Rupture of the tendon of peroneus longus is rare. Only one previous report has been found in the literature.

There was no instance of rupture of peroneus longus in 230 cases of subcutaneous rupture of tendons and muscles reviewed by Maydl (1882–1883), nor did Grassheim (1922) report it in a series of 500 similar injuries. There were two cases of open division of the tendon of peroneus longus in a series of 143 cases of disruption of muscles and tendons in the lower limb reported by Lipscomb and Kelly (1955). This series is also mentioned in the larger series

FIG. 2
Section of the bulbous end of the peroneus longus tendon showing the transverse rupture. (× 10.)

FIG. 3
Enlarged view of part of the tendon seen in Figure 2 showing exudate and fibroblastic proliferation. (× 50.)
of 1,014 disruptions of muscles and tendons reported in 1959 by Anzel, Covey, Weiner and Lipscomb, but no instance of subcutaneous rupture of the peroneus longus tendon was noted.

Bénassy (1957), in a full review of subcutaneous rupture of tendons in sporting injuries, made no mention of peroneus longus, nor did Gilcreest (1933) in a review of lower limb tendon and muscle ruptures. The only case found in the literature was reported by Burman (1956) in a man of thirty-eight who had previously suffered from osteomyelitis of the tibia, with overgrowth of the fibula and varus deformity of the foot. Exploration in his case showed excessive fluid in the peroneal sheath, a partial tear of the peroneus longus tendon and an attempt at repair with a bulbous swelling. The tendon was adherent to its sheath. The enlarged segment was excised and the proximal end was sutured to the tendon of the peroneus brevis, the distal end being anchored to the cuboid bone. The increased angulation of the peroneus longus tendon as it crossed an enlarged peroneal tubercle was considered to lead to increased pressure on the tendon and its sheath in this case.

It is interesting to speculate on the mechanism by which the peroneus longus tendon could be ruptured. In an earlier paper Burman (1953) investigated a series of cases of stenosing tenovaginitis of the peroneal tendon sheaths and concluded that repeated inversion of the foot injured the tendon and sheath. Exploration in several cases revealed thickening of the sheath and loss of the smooth gliding action of the tendon. McMaster (1933) studied tendon rupture from muscle violence in rabbits, and showed that healthy tendon does not rupture if a sudden strain is applied to it. The origin or insertion, or the musculo-tendinous junction, yields if the force applied is sufficient. Further studies with partly severed tendons showed that approximately half of the thickness of healthy tendon had to be cut through before the tendon ruptured at the injured part. McMaster caused local vascular injury by obstructing the blood supply to a section of the tendon and found that after four weeks the ischaemic changes led to rupture at this region of the tendon when a sudden strain was applied.

In the case reported here there was no evidence of earlier injury or of previous disease, factors which could lead to ischaemic changes in the tendon of peroneus longus. If the peroneus longus is actively contracting in the fixed foot and is then further stretched by the weight of the body falling to the opposite side, the circumstances described by McMaster (1933) are reproduced.

It is suggested that rupture in this case occurred at the time of the football injury, the severe inversion strain leading to rupture of the tendon between the lateral malleolus and the cuboid bone, where the tendon changes direction again.

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REFERENCES


