



Rupture of the tibialis anterior tendon

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Rupture of the tibialis anterior tendon is rare. There is usually a delay in diagnosis, probably because it is an uncommon entity. Diagnosis is easy however, and recovery with surgical treatment is satisfactory if repair is performed within the first three months following the initial trauma. After this period of time, an operation is less likely to be effective. We report a case with successful outcome following surgical repair of a ruptured tibialis anterior tendon.

Keywords : tibialis anterior tendon ; rupture ; surgical repair.

INTRODUCTION

Unusual sports injuries do not necessarily need to be treated with an uncommon or exceptional procedure. Some injuries can be treated easily, if diagnosed properly and on time. We present a case of such a rare injury, which was treated successfully with a common and widely used procedure.

CASE REPORT

A previously healthy 68-year-old man fell while cross-country skiing, which led to forced plantar flexion of his left foot. He was untrained and had never practiced this sport before. Immediately after injury, there was mild pain and he was still able to walk without any abnormalities in his gait. There were no obvious external signs, especially no swelling or haematoma. After his vacation he visited the family practitioner because his foot became

more painful. Furthermore he complained of a 'slapping foot' when walking and had problems with active dorsiflexion of his forefoot. Based on these findings, while there was no sign of a neurological injury of any kind, the family general practitioner referred the patient to our hospital with the diagnosis of a ruptured tibialis anterior tendon.

Physical examination revealed a 2 × 2 centimeter sized mass at the mediodorsal aspect of the foot. This soft, mobile subcutaneous tender mass was located along the tendon of the tibialis anterior muscle. Just distal to this swelling, a definite gap was noted on palpation. There was no other painful area, in particular over the cuneiform bone or the basis of the first metatarsal bone (i.e. the distal insertion of the tibialis anterior tendon). On attempting to actively dorsiflex his left foot, the tendon of the tibialis anterior muscle did not strain, whereas this occurred on the contralateral side (fig 1). The passive range of motion was similar to

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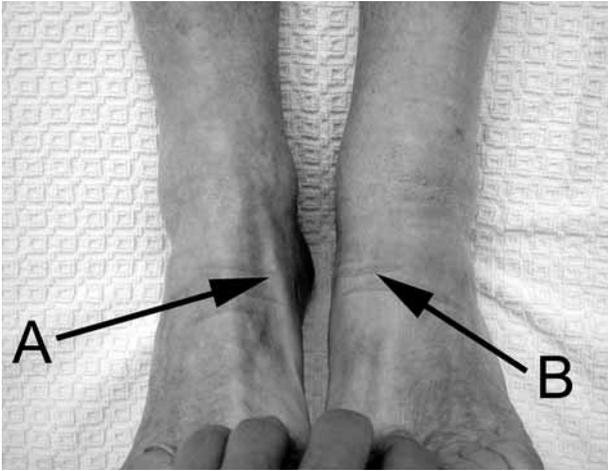


Fig. 1. — The strained tendon of the tibialis anterior muscle is demonstrated on the healthy side (A), but not on the injured side (B) during an attempt to actively dorsiflex both feet against resistance.

the uninjured side. The patient walked with a step-page gait and he was not able to lift his forefoot on request. Roentgenograms of the foot and ankle showed no osseous abnormalities; ultrasonography however showed a rupture of the tibialis anterior tendon. The proximal part of the tendon was located near the superior extensor retinaculum.

Six weeks after the initial trauma, the ruptured tendon was surgically repaired under general anaesthesia. Via an anterolateral incision just above the inferior extensor retinaculum, the peritendineum of the tibialis anterior muscle was approached and opened. After evacuation of an old haematoma, the proximal part of the ruptured tendon could be exposed. The rupture was located approximately two centimeters proximally to the insertion of the tibialis anterior tendon at the cuneiform bone. After debriding both tendon ends, primary repair of the tendon according to Bunnell was performed. A cast with the foot placed in 10° dorsiflexion was applied. After two weeks it was replaced by a semi-flexible casting tape for four weeks, during which he was allowed weight-bearing as tolerated. He was seen at the outpatient clinic two, four, six and twelve months after the initial trauma. He had no complaints and a full

recovery of his function was obtained two months after surgery, without abnormalities in his gait.

DISCUSSION

Rupture of the tibialis anterior tendon is uncommon. This is probably why it is rarely diagnosed in the acute post traumatic phase, and diagnosis becomes subsequently more difficult (1). An injury of the peroneal nerve has to be excluded. Typical signs of a rupture are: A; a gap between the upper extensor retinaculum and the insertion of the tibialis anterior tendon. B; a palpable mass, corresponding to the retracted ruptured tendon and C; impairment of active dorsiflexion of the foot (4). In some cases there is also a soft-tissue swelling. To confirm the diagnosis, a sonographic examination can be made, which shows the retracted stump. Roentgenograms are necessary to exclude an osseous lesion. When in doubt, additional examinations such as magnetic resonance imaging can be helpful (6). There is no standard treatment because of the rare occurrence of the lesion. Dooley *et al* suggested that a surgical intervention more than three months after injury is less likely to be effective when compared to earlier tendon repair (1). An elderly person who is not active is therefore best treated conservatively. However, if the patient presents in the acute stage, the preferred treatment of this injury is primary surgical repair. Several techniques have been described: end-to-end suture with wire (Bunnell), tendon lengthening (Kashyap & Prince) (3), free graft with the peroneus tertius tendon (Gaulrap & Heimkes) (2) and soft tissue anchors to tenodesis the tendon to its original insertion (Miller & Mahan) (5). Since there was enough length for a tension-free reconstruction in this case, we used the Bunnell technique to reapproximate both tendon ends.

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