



Fracture of the posterior medial tubercle of the talus : A case report and review of the literature

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Isolated fracture of the posterior medial tubercle of the talus is a rare injury. To our knowledge the fracture has only been described by five different authors. We diagnosed lately a fracture after a direct trauma. Non-operative treatment with custom made insoles and counselling lead to a acceptable outcome.

Keywords : fracture ; medial tubercle of talus ; conservative treatment.

INTRODUCTION

Fracture of the medial tubercle of the posterior process of the talus is an uncommon injury. It may be caused by indirect trauma (1-4) or by direct trauma (5,6). Most reports describe an operative treatment (1-6), but non-operative treatment can also be successful (4).

CASE-REPORT

A 17-year-old white Caucasian male visited our outpatient clinic for pain at his right ankle when playing soccer. This started eight months earlier subsequent to a direct trauma during a soccer match. At that time he stopped his game, did not do any sports for two weeks and took NSAID. Thereafter he noted a boring pain at the posterior aspect of his ankle when playing. The patient's medical and surgical history was unremarkable.

Clinical examination on the first visit at our institution showed a normal range of motion in the tibiotalar joint. A tender point distal and posterior to the medial malleolus was present. Neurovascular examination and plain radiographs were normal. He was treated initially with proprioceptive and muscle strengthening exercises of the peroneal muscles, flexor digitorum longus and flexor hallucis longus, and custom made insoles. At follow-up after six weeks, the pain had disappeared during sports activities but he had an ankle sprain two days earlier. Clinical examination revealed pain both around the lateral malleolus and the medial malleolus. The ankle sprain was treated with analgetics and a functional rehabilitation program. Six months later he visited again because the boring pain was again partially present. At that time he was playing soccer intensively again. Bone scan revealed a focal hot spot at the posterior and medial side of the talus (fig 1). CT-arthrography showed an ununited fracture of the medial process of the

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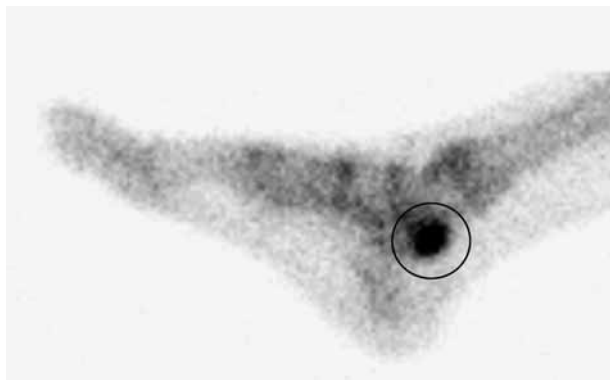


Fig. 1. — Bone scan revealed a posteromedial hot spot

posterior tubercle of the talus (fig 2). Surgical treatment was offered to the patient but he refused this option. He did some intensive muscle strengthening training. After six months he played soccer again without any pain. Now two years later he plays football intensively with his custom made insoles. He cannot play without them. He refused a control CT or further treatment.

DISCUSSION

Differential diagnosis of posterior ankle pain includes os trigonum syndrome, fracture of the lateral tubercle of the talus, Achilles tendinopathy, retrocalcaneal bursitis, arthritis and tibialis posterior, peroneal or flexor hallucis longus tendinopathy.

The posterior process of the talus is composed of the medial and lateral tubercles, with an intervening groove for passage of the flexor hallucis longus tendon. It serves as the site of attachment for the posterior talotibial ligament superiorly and the medial limb of the bifurcate talocalcaneal ligament inferiorly.

Fracture of the medial tubercle of the talus is a rare injury. It was first described by Cedell in 1974 (1). He described four patients who sustained this injury during sports. The fracture was caused by indirect trauma and the diagnosis was made late. Three of the four patients underwent excision. They all returned to sporting activities. In 1995 Kanbe described two case reports (5). Both fractures were displaced and they were diagnosed



Fig. 2. — Ct-artrography revealed an ununited fracture of the posterior medial tubercle of the talus.

early. Both were treated with open reduction and internal fixation. In 1996 and 2003 Kim described five patients with an avulsion fracture of the medial tubercle of the posterior process of the talus (3,4). Two patients were diagnosed early and treated with immobilization and limited weight bearing. The other three patients had a delayed diagnosis and were treated with operative excision. This provided improvement of symptoms of chronic posteromedial ankle pain. In 1998 Wolf described a fracture caused by direct trauma for the first time (6). It failed to respond to conservative therapy and was treated successfully with surgical excision. In 2000 Cohen described a patient with multiple injuries

after a traffic accident (2). CT-scan revealed a displaced fracture of the posteromedial process. It was treated successfully by internal fixation.

Our patient had a delayed diagnosis of a non-displaced fracture of the posterior process of the talus after direct trauma. His complaints ameliorated with proprioceptive and muscle strengthening exercises and custom made insoles. After he received full explanation on his symptoms he denied further surgical treatment. He resumed his intensive muscle strengthening exercises with good results. Unfortunately he refused further investigation. We could not assess whether bone union was achieved.

CONCLUSION

Fracture of the posterior medial tubercle is a very rare injury. When the fracture is not displaced and the diagnosis is made early, the preferred treatment in literature is conservative with plaster immobilisation. When the fracture is displaced the preferred option in literature is open reduction and internal fixation. When diagnosis is delayed it may

be responsible for chronic posteromedial ankle pain. Proprioceptive, muscle strengthening exercises and custom made insoles together with a good explanation may give satisfactory relief of the symptoms. If relief is insufficient, surgical excision of the fragment is indicated.

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