

# Stress fracture of the lateral process of the talus – a case report

**Stephen G. Motto BM DM-SMed Dip Sports Med**

London Bridge Clinic, London, UK

**A diagnosis of stress fracture of the lateral process of the talus was made in a 52-year-old tennis player with chronic lateral ankle pain. This uncommon condition should be considered in the differential diagnosis of chronic lateral ankle pain in an athlete, as delay in appropriate treatment may lead to considerable morbidity.**

**Keywords:** Ankle pain, stress fracture, talus, sub-talar joint

Stress fractures of the lateral process of the talus involving the subtalar joint have not been well documented in the sports medicine or orthopaedic literature. Acute traumatic fracture of the lateral process of the talus has been reported<sup>1</sup>. The case presented illustrates how repetitive loading in a tennis player led to a stress fracture of the talus involving the lateral process and subtalar joint. This type of injury is probably rare and the case described had a prolonged disability.

## Case report

A 52-year-old male competitive tennis player presented with a 27-month history of left ankle pain.

There was a gradual increase in pain in the posterior ankle joint for no apparent reason. The patient was unable to continue playing tennis, and walking became uncomfortable. A diagnosis of lateral ligament sprain was made and physiotherapy was given. No improvement in symptoms was noted after 1 month of treatment.

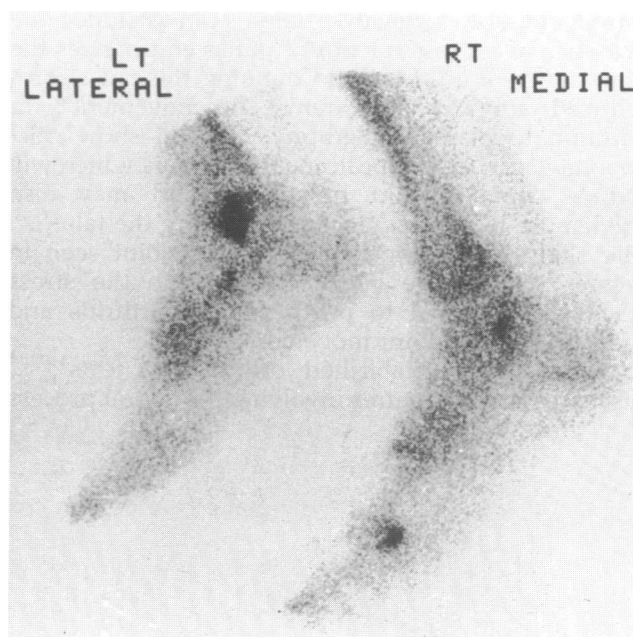
Over the next 18 months, walking gradually became easier, but pain was still experienced during running, playing golf and tennis.

On examination the tennis player had a full range of movement in the left ankle joint, but the subtalar joint mobility was restricted compared with the right side. There was good forefoot to rearfoot alignment and no significant biomechanical malalignment of the lower limbs. Hopping on the affected foot, and posterior talar compression were painful in the posterior ankle region.

He was treated with local corticosteroid injections into the posterior talar space and sinus tarsi. Only minor subjective improvements resulted and the range of movement in the subtalar joint was still restricted. A technetium-99m radionuclide bone scan (Figure 1) was reported as compatible with degenerative changes, but the computed tomographic (CT) scan (Figure 2) clearly demonstrated a stress fracture involving the lateral process of the talus and extending to the subtalar joint. No coexisting talar or navicular coalition were present.

An anterolateral arthrotomy and surgical exploration of the ankle was performed. The talus was probed and evidence of healing was found at the fracture site. No loose bodies were seen, only synovitis and debris. The joint was irrigated with saline, a tubigrip support was applied and the patient allowed full weight bearing as able.

There was symptomatic improvement over 6 months, although the subtalar joint range of movement was still restricted. Repeat CT scanning



**Figure 1.** Technetium-99m bone scan of the feet showing increased activity in the left talar region

Address for correspondence: Dr Stephen Motto, London Bridge Clinic, 1 St Thomas Street, London SE1 9RY, UK

© 1993 Butterworth-Heinemann Ltd  
0306-3674/93/040275-02



**Figure 2.** CT scan of the talus demonstrating the stress fracture of the left lateral process

confirmed healing. The patient was more comfortable during running although he was still unable to play tennis.

## Discussion

A stress fracture is defined as a break in normal bone that occurs when that bone is subjected to repeated loading, the loading being less than that which causes acute fracture<sup>2,3</sup>. It is helpful to regard stress fracture as an injury ranging from an early stress reaction to a radiologically evident stress fracture<sup>4</sup>.

The primary radiological findings are often minimal or absent and a technetium-99m bone scan is invaluable in diagnosis. False positive bone scans are infrequent and a negative bone scan excludes the presence of a stress fracture<sup>4,5</sup>. Jahss emphasizes the importance of a CT scan in defining the cause for a reduced subtalar joint range of movement<sup>6</sup>. In addition to plain radiography, CT will show calcaneonavicular and talocalcaneal coalitions which will reduce subtalar joint movement and may also predispose to a stress fracture involving the talus<sup>6-8</sup>. The slight narrowing of the subtalar joint seen in *Figure 2* may have been secondary to the stress fracture which led to post-traumatic arthritis and reduced subtalar joint movement.

A review of established orthopaedic texts<sup>1,9-11</sup> discusses acute fractures involving the lateral process

of the talus. However, no mention is made of stress fractures involving this region where the causative mechanism is more subtle and the diagnosis difficult. Reviews of the recent literature on talar injuries do not mention stress fractures of the lateral talar process<sup>2,8,12,13</sup>; most refer to osteochondral defects of the talar dome or stress fractures of the talar neck.

Stress fractures in athletes usually heal with rest and conservative treatment. Talar neck stress fractures are often managed with a below-knee walking cast and a gradual return to sport<sup>2</sup>. In the case presented, delay in diagnosis and earlier application of plaster cast may have contributed to prolonged morbidity.

In summary reduced subtalar joint range of movement requires further investigation in an athlete with chronic ankle and foot pain. The differential diagnosis of lateral ankle pain and sinus tarsi syndrome should include stress fractures of the lateral talar process involving the subtalar joint. It is important to diagnose stress fractures of the talus early as pathology in this area is associated with prolonged morbidity<sup>4</sup>. Appropriate treatment can be given earlier in the course of the injury in an attempt to reduce morbidity and allow an earlier return to sport.

## References

- 1 Klenerman L. *The Foot and its Disorders*. 3rd ed. Oxford, UK: Blackwell Scientific, 1991: 191-3.
- 2 Hontas MJ, Haddad RJ, Schlesinger LC. Conditions of the talus in the runner. *Am J Sports Med* 1986; **14**: 486-90.
- 3 Prather JL, Nusynowitz ML, Snowdy HA et al. Scintigraphic findings in stress fractures. *J Bone Joint Surg [Am]* 1977; **59-A**: 869-74.
- 4 Matheson GO, Clement DB. Stress fracture in athletes. Special considerations. In: Kvist M, ed. *Paavo Nurmi Congress Book*. Turku, Finland: The Finnish Society of Sports Medicine, 1989: 197-9.
- 5 Markey KL. Stress fractures. *Clin Sports Med* 1987; **6**: 405-25.
- 6 Jahss M. *Disorders of the Foot and Ankle. Medical and Surgical Management*. Vol. 1. London, UK: WB Saunders, 1991: 176.
- 7 McGlone JJ. Stress fracture of the talus. *J Am Podiatr Med Assoc* 1965; **55**: 814.
- 8 Perry DR, O'Toole ED. Stress fractures of the talar neck and distal calcaneus. *J Am Podiatr Med Assoc* 1981; **71**: 637-8.
- 9 Helal B, Wilson D. *The Foot*. Vol 2. Edinburgh, UK: Churchill Livingstone, 1988: 917-31.
- 10 Jahss M. *Disorders of the Foot and Ankle. Medical and Surgical Management*. Vol 2. London, UK: WB Saunders, 1991: 2309.
- 11 Watson-Jones R. *Fractures and Joint Injuries*. Vol 2. Edinburgh, UK: Churchill Livingstone, 1982: 1187.
- 12 Campbell G, Warnekros W. A tarsal stress fracture in a long-distance runner. A case report. *J Am Podiatr Med Assoc* 1983; **73**: 532-5.
- 13 Keene JS, Lange RH. Diagnostic dilemmas in foot and ankle injuries. *JAMA* 1986; **256**: 247-51.