

## Transient Osteoporosis of the Talus Followed by Migration to the Tibia

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Transient osteoporosis is characterized by pain of uncertain etiology in the involved joint and spontaneous recovery<sup>1</sup>. The talus alone is rarely affected compared to the hip<sup>2,3</sup>. We describe a patient with transient osteoporosis of the talus, which was followed by migration to the tibia.

A 51-year-old man presented with disabling foot pain without prior trauma, which was much worse on weight

bearing and decreased at rest. There were no abnormal findings in the laboratory analysis, including C-reactive protein, rheumatoid factor, or uric acid. Magnetic resonance imaging (MRI) of the talus head showed a low signal intensity on T1 weighted images and high signal intensity on STIR (short inversion time inversion recovery) images, suggesting bone marrow edema. He was advised to avoid weight bearing

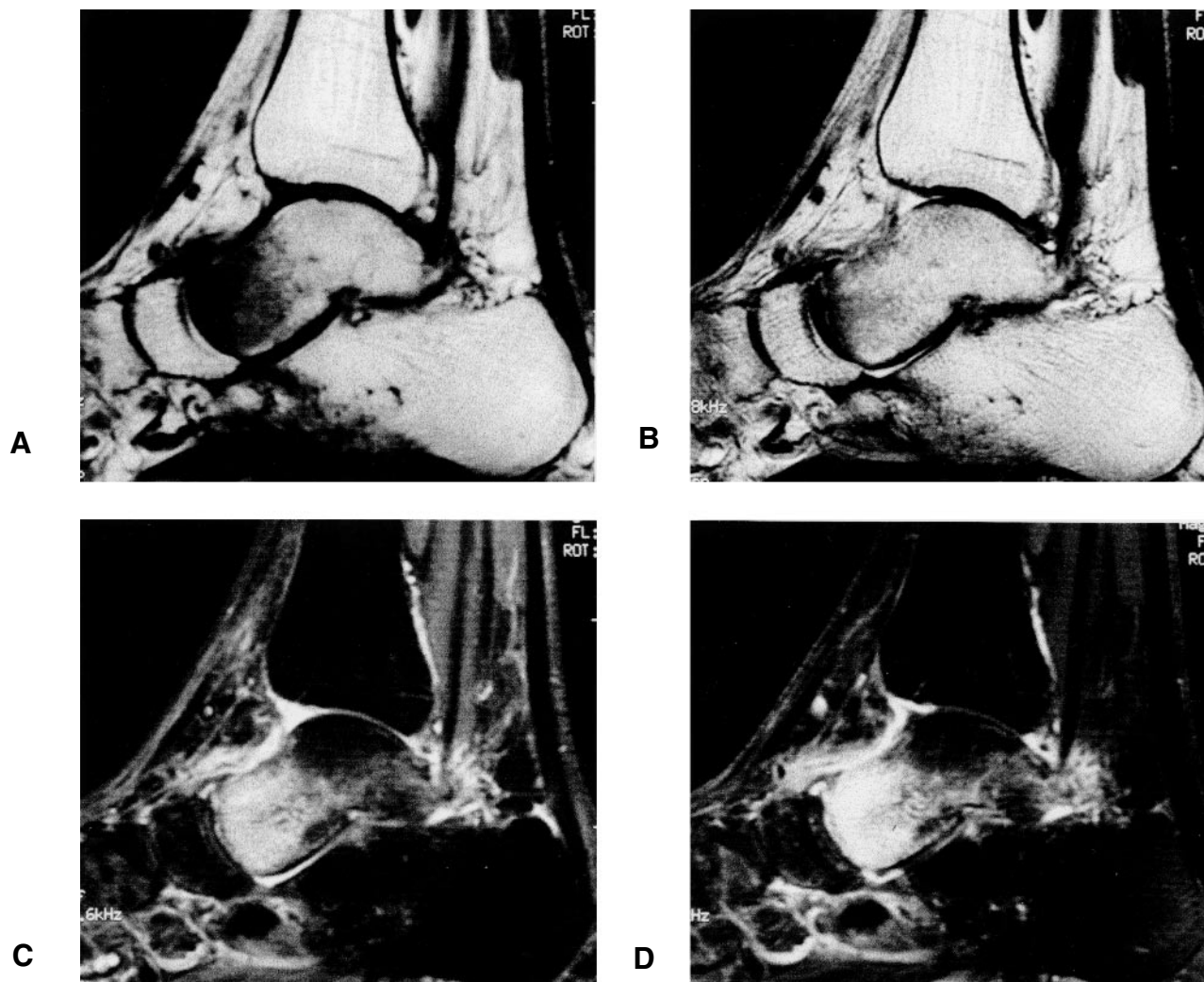
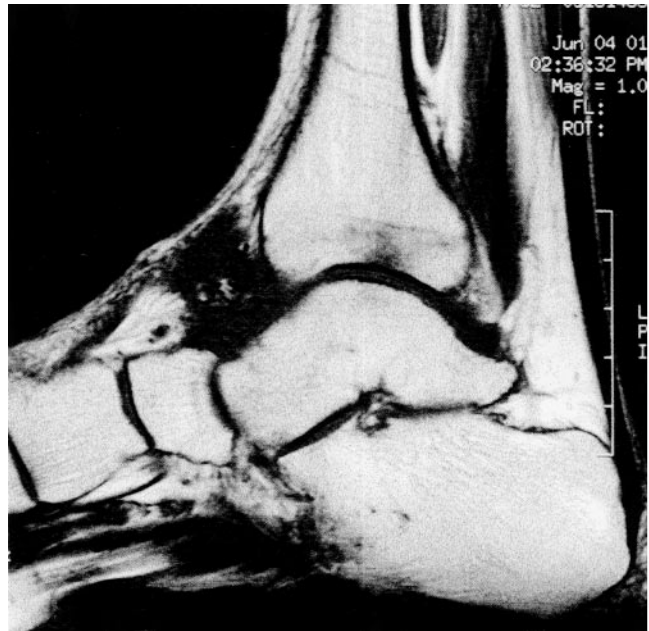
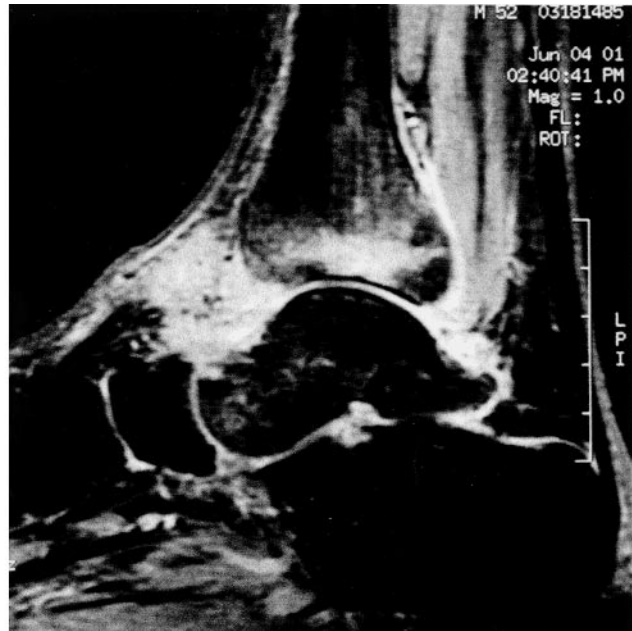


Figure 1. Sagittal MR images at the time of initial examination. Signal intensity in the neck and head of the talus was decreased in T1 weighted images (a), slightly increased in T2 weighted images (b), and increased in both STIR (c) and fat suppressed gadolinium enhanced T1 weighted images (d).



**A**

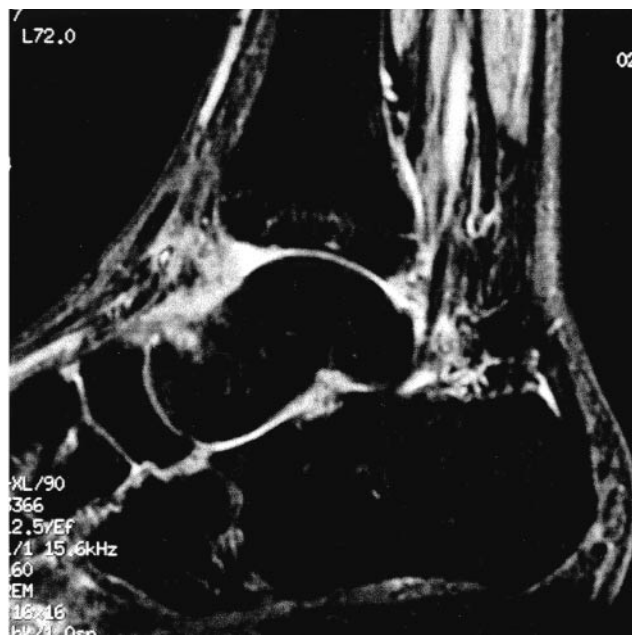


**B**

Figure 2. Sagittal T1 weighted (a) and STIR (b) images 4 months after initial examination. A normal signal was seen at the talus, while decreased signal on the T1 weighted and increased signal on STIR images were observed at the distal end of the tibia.



**A**



**B**

Figure 3. Sagittal T1 weighted (a) and STIR (b) images 6 months after initial examination, showing normal signals in both the talus and the distal end of the tibia.

stress. The symptoms gradually subsided 4 months later. At this time, MRI of the talus was normal, while the lesion had migrated to the distal tibia. The pain disappeared

completely 6 months after his initial visit to our hospital, and MRI became normal in both the talus and tibia. He was then able to walk bearing full weight. One year after the

initial examination, he was pain-free and returned to his former work.

Many diseases such as osteonecrosis, insufficiency fracture, infection, inflammatory disease, tumor, or reflex sympathetic dystrophy were considered as differential diagnoses. From the histology or MRI findings, the term “transient bone marrow edema syndrome” is proposed instead of “transient osteoporosis”<sup>4,5</sup>. There is still opportunity for discussion about the pathophysiology of this disease.

#### REFERENCES

1. Laxhanpal S, Ginsburg WW, Luthra HS, Hunder GG. Transient regional osteoporosis. A study of 56 cases and review of the literature. *Ann Intern Med* 1987;106:444-50.
2. Calvo E, Alvarez L, Fernandez-Yruegas D, Vallejo C. Transient osteoporosis of the foot. Bone marrow edema in 4 cases studied with MRI. *Acta Orthop Scand* 1997;68:577-80.
3. Judd DB, Kim DH, Hrutkay JM. Transient osteoporosis of the talus. *Foot Ankle Int* 2000;21:134-7.
4. Ribera Zabalbeascoa J, Santos Rodas A, Mella Sousa M, Uceda Carrascosa P, Benito Caparros M. Transient osteoporosis of the hip. *Int Orthop* 1999;23:244-6.
5. Wilson AJ, Murphy WA, Hardy DC, Totty WG. Transient osteoporosis; transient bone marrow edema? *Radiology* 1988; 167:757-60.