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Stress Fracture in the Presence of a Calcaneonavicular Coalition: A Case Report

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INTRODUCTION

Stress fracture of the anterior process of the calcaneus in the presence of a calcaneonavicular coalition is previously unreported in the literature. The following is a case of a marathon runner who experienced tightness in the lateral aspect of his foot during a training run, then felt a "pop" while running the 2004 Boston marathon. MRI obtained 3 weeks after the race showed a nondisplaced, transverse fracture across the anterior process of the calcaneus. The MRI also showed a previously undiagnosed calcaneonavicular coalition.

CASE REPORT

A 47-year-old man presented to our clinic with a 5-week history of pain in the lateral aspect of his left foot. He had first noticed this pain during a 20-mile training run in preparation for the Boston marathon. The pain at that time was not severe, and the patient described the feeling of needing to stretch his foot. During the marathon, the patient stopped at mile 4 to stretch his foot and felt a "pop." After finishing the race, the patient reported to a local emergency department with increasing foot pain. Radiographs of the foot showed no fracture or dislocation. The patient experienced continued pain and swelling of the lateral hindfoot for the next 2 weeks, despite using anti-inflammatory medication, ice, an elastic bandage, and elevation. He did not attempt to run between the marathon and his presentation to our clinic 3 weeks after the race.

Physical examination revealed mild swelling and tenderness over the left sinus tarsi and proximal fifth metatarsal. Alignment of his feet and ankles were normal. His hindfoot showed mild varus alignment. The patient exhibited 5/5 strength of the peroneals and had normal muscle balance around the ankle. Anterior drawer testing revealed a solid endpoint. Subtalar motion was limited bilaterally. Resisted dorsiflexion and eversion did not cause dislocation of the peroneal tendons over the lateral malleolus. The patient displayed a mildly antalgic gait pattern. No neurologic deficits were noted.

Nonweightbearing radiographs showed no sign of an acute fracture. An oblique radiograph did not show signs of a calcaneonavicular coalition. MRI obtained on April 27, 2004, three weeks after the "pop," showed a transversely oriented fracture of the anterior process of the calcaneus approximately 1.5 cm proximal to a fibrous coalition with the navicular (Figure 1).

A comparison MRI obtained on June 9, 2004, showed the continued presence of bone marrow edema consistent with a stress fracture of the anterior process of the calcaneus (Figure 2).

After incorporating nonimpact and low-impact training with pool and elliptical trainer workouts for a period of 2 months, this patient began running on a treadmill. In early August, approximately 4 months after the original injury, the patient was able to run 18 miles without discomfort. He went on to complete a marathon in early October without symptoms.

Fig. 1: STIR image demonstrating calcaneonavicular stress fracture.
initial treatment in a cast failed. Despite fusion this patient continued to have midtarsal pain the authors attributed to peroneal spasm. Tanaka et al.\textsuperscript{1} also reported a 23-year-old male with navicular fracture after an inversion injury. Calcaneonavicular coalition was discovered on plain radiographs, and the patient was treated with en bloc resection of the beak of the calcaneus to the fracture line of the navicular. The patient went back to work as a truck driver and remained asymptomatic.

CONCLUSION

Our patient did not require surgery and did quite well after conservative management.

REFERENCES