

What Is Your Diagnosis?



Figure 1—Lateral (left) and dorsomedial-plantarolateral oblique (right) radiographic views of the left tarsus of a 4-year-old Thoroughbred with a severe left hind limb lameness of 6 days' duration.

History

A 4-year-old racing Thoroughbred was referred for evaluation of a severe left hind limb lameness of 6 days' duration. Lameness was initially detected several hours after the horse had been exercised on a walker and had improved only slightly since then without treatment. Physical and lameness examinations revealed a grade 3/5 lameness of the left hind limb at the walk and a grade 4/5 lameness at the trot. Flexion of the left tarsus elicited signs of pain and exacerbated the lameness 1 grade. Radiographs of the left tarsus were obtained (Fig 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page ▶

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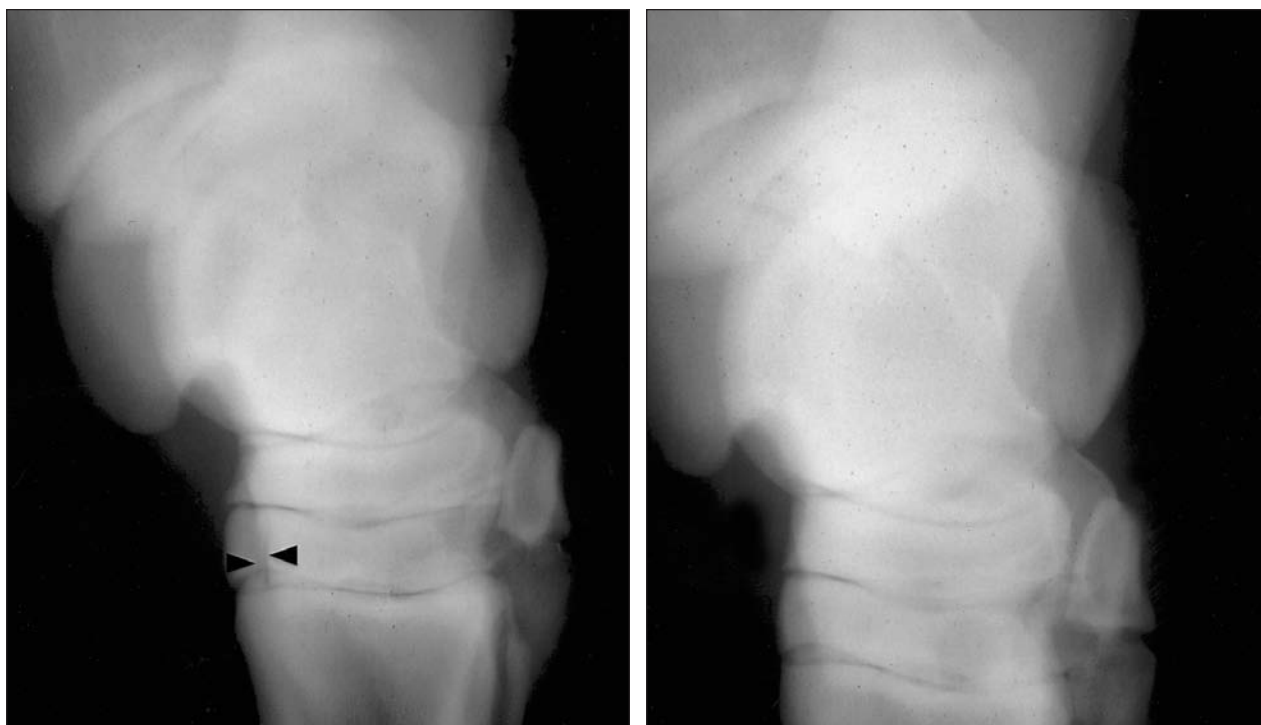


Figure 2—Same dorsomedial-plantarolateral oblique radiographic view as in Figure 1 (left). Notice the 2 fracture lines in the third tarsal bone (arrowheads). A dorsomedial-plantarolateral oblique radiographic view of the unaffected right tarsus of the same horse is shown for comparison (right).

Diagnosis

Radiographic diagnosis—Minimal soft-tissue swelling of the tarsocrural and proximal intertarsal joints and a minimally displaced oblique slab fracture of the third tarsal bone (Fig 2).

Comments

The fracture, although only visible in 1 plane, was minimally distracted; lateral and medial margins were not detected on either radiographic view. The fracture was repaired surgically by inserting a 3.5-mm cannulated screw in lag fashion. Perioperative medication included procaine penicillin (22,000 U/kg [10,000 U/lb] of body weight, IM, q 12 h), gentamicin (6.6 mg/kg [3 mg/lb], IV, q 24 h), and phenylbutazone (4 mg/kg [1.8 mg/lb], IV, q 24 h) for 2 days.

The horse recovered from anesthesia and surgery but developed a mild pressure sore on the dorsomedial aspect of the tarsus. Treatment consisted of continued bandage changes and administration of trimethoprim-sulfadiazine (20 mg/kg [9.1 mg/lb], PO, q 12 h) and phenylbutazone (2.2 mg/kg [1 mg/lb], PO, q 12 h) for 7 days after surgery. The horse was discharged from the hospital 9 days after surgery with a guarded prognosis for return to athletic function. Radiographic reexamination was suggested after 60 days of stall rest.

Slab fractures of the third tarsal bone are uncommon injuries and most often develop in horses performing at race speeds after strenuous exercise. The diagnosis can be difficult, because soft-tissue swelling may be minimal, and lateromedial and dorsoplantar radiographic views may not reveal a fracture line. Common clinical findings include heat over the affect-

ed joint, signs of pain on palpation of the dorsal aspect of the tarsal joint, and exacerbation of the lameness 1 or 2 grades after flexion of the tarsus.

Interosseous ligamentous damage in the distal portion of the tarsus has been hypothesized to cause a premature inward rotation of the third tarsal bone during the second half of the stride. This premature rotation may permit abnormal compression of the third tarsal bone between the central tarsal and third metatarsal bones.¹ Fractures usually occur at the dorsal or dorsolateral aspect of the third tarsal bone. Nuclear scintigraphy or several oblique radiographic views taken at different angles may be required to confirm the diagnosis. The treatment of choice for racehorses is internal lag screw fixation to prevent or minimize the development of degenerative joint disease in the distal intertarsal and tarsometatarsal joints. Conservative treatment with prolonged stall rest has been associated with severe degenerative changes in the distal tarsal joints.^{1,2} However, in a recent study,³ 10 of 14 Standardbreds and 2 of 6 Thoroughbreds with a fracture of the third or central tarsal bone successfully returned to racing after conservative treatment.

References

1. Lindsay WA, McMartin RB, McClure JR. Management of slab fractures of the third tarsal bone in 5 horses. *Equine Vet J* 1982;14:55–58.
2. Winberg FG, Pettersson H. Outcome and racing performance after internal fixation of third and central tarsal bone slab fractures in horses. A review of 20 cases. *Acta Vet Scand* 1999;40:173–180.
3. Murphey ED, Schneider RK, Adams SB, et al. Long-term outcome of horses with a slab fracture of the central or third tarsal bone treated conservatively: 25 cases (1976–1993). *J Am Vet Med Assoc* 2000;216:1949–1954.