

What's Your Radiographic Diagnosis?

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History

A 6 year old Quarterhorse gelding was presented to the Iowa State University Veterinary Teaching Hospital for evaluation of a left hind leg lameness. The horse had become acutely lame 5 weeks previously. Two weeks of inactivity had significantly reduced the lameness. The horse was then taken on a trail ride during which the lameness reoccurred and had continued until presentation to the Veterinary Teaching Hospital. No previous lameness was reported. The horse was used to work stock and for pleasure riding.

Physical Examination

The horse exhibited mild lameness in the left hind leg at a walking gait. Following flexion of the tarsus the degree of lameness increased significantly. The dorsomedial aspect of the left tarsus was slightly swollen and felt warmer than the corresponding region of the right tarsus. All other aspects of the physical examination were normal. Radiographs of the left tarsus were taken. (Figure 1 abcd). Tarsal osteoarthritis (bone spavin) or tarsal fracture were suspected differential diagnoses.



Figure 1a.

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Figure 1b.

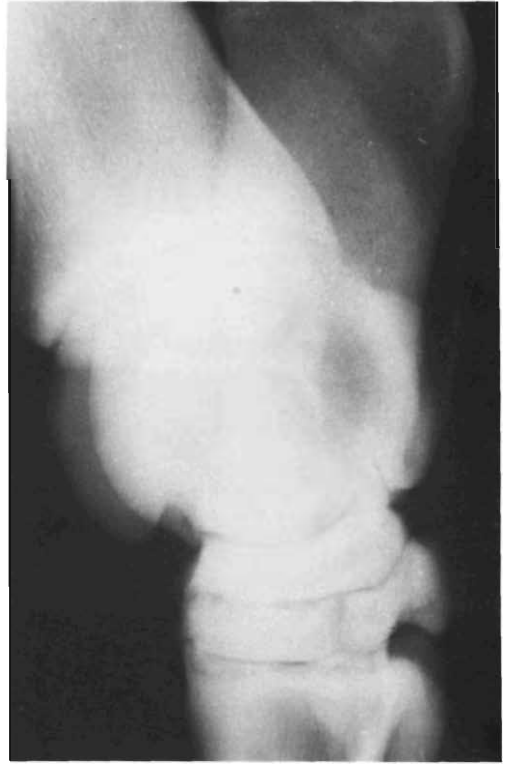


Figure 1c.



Figure 1d.

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Figure 2.

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Radiographic Findings

A radiolucent line, directed vertically, is seen in the central tarsal bone on the lateral projection. (Fig. 2) It is most apparent at the proximal intertarsal joint level but did also extend to the distal intertarsal joint surface. It is not seen in any of the other projections. However, periosteal new bone is seen along the dorsal surfaces of both the central and third tarsal bones in the plantarolateral-dorsomedial oblique view (Fig. 1c).

Radiographic Diagnosis

Non-displaced slab fracture of the left central tarsal bone with new bone changes indicative of developing secondary joint disease.

Discussion

Slab fractures of the central tarsal bone are uncommon.¹ They have also been reported in the third tarsal bone.¹ The diagnosis of these fractures requires their identification on radiographs. This is difficult if the fracture is acute and is non-displaced. The fracture will be depicted radiographically only when the x-ray beam passes in a direction parallel to the fracture plane. This explains why it was not seen in the standard oblique and dorsoplantar views of the horse. Its identification in this horse was aided by the 5 week interval be-

tween its probable occurrence and the radiographic study. Absorption of bone along the fracture line occurs during the initial attempts at healing. This will enlarge the fracture gap, thus making it more easily detected radiographically.

Although lag screw fixation of this fracture is the surgical method of treatment, minimal exercise and restriction to a small paddock were the chosen treatments in this horse. This was recommended for six months. After four months the horse returned for a recheck. The lameness had lessened. Radiographs made at this time still showed the fracture line and an increase in the degree of secondary joint changes.

References

Stashak, T.S., in *Adam's Lameness in Horses*, 4th ed, Lea & Febiger, Chap. 8, p. 710-711.

Figure 1. The four standard views of the left tarsus used to evaluate the chronic lameness in this 6 year old Quarterhorse gelding. a. Laterolmedial view, b. Dorsoplantar view, c. Plantarolateral-Dorsomedial oblique view, d. Dorsolateral-Plantaromedial oblique view.

Figure 2. Slab fracture of the central tarsal bone. The arrow points to the fracture line at the proximal intertarsal joint surface.