

2001

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Recommended Citation

Riedesel, Elizabeth (2001) "What's Your Radiographic Diagnosis?," *Iowa State University Veterinarian*: Vol. 63 : Iss. 1 , Article 16.
Available at: https://lib.dr.iastate.edu/iowastate_veterinarian/vol63/iss1/16

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WHAT'S YOUR RADIOGRAPHIC DIAGNOSIS?

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Presentation

A four year old, Thoroughbred mare presents for lameness in the left front leg of several weeks duration. At physical examination, there is very mild swelling along the dorsum of the metacarpus. Deep palpation of this region is moderately painful. Lameness is not evident at the walk but is mild after trotting. Radiographs of the metacarpus were taken. (Fig.1)

Radiographic Findings

A 1.5 cm long oblique radiolucent line is present in the dorsal-lateral diaphyseal cortex of metacarpal 3. The lucent line courses from dorsodistal to palmaroproximal with incomplete penetration of the endosteum. Periosteal and endosteal new

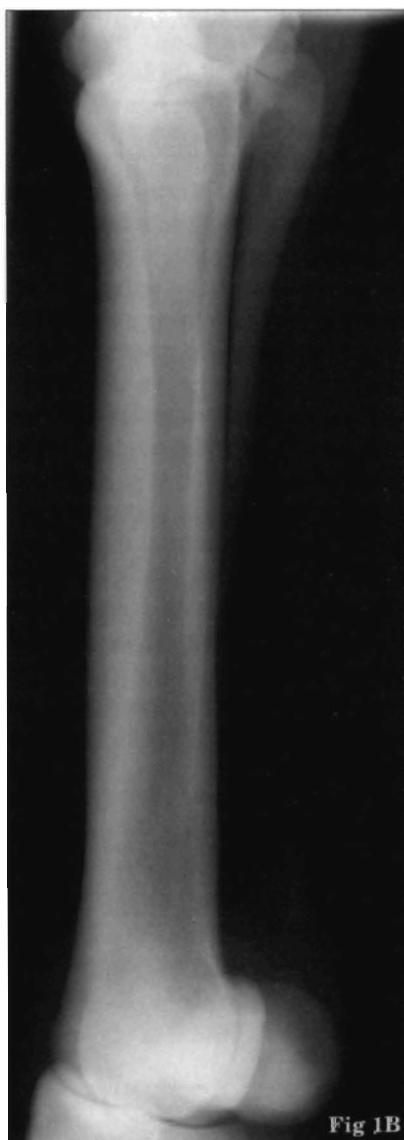


Figure 1. PalmaroLateral-DorsoMedial oblique (A) and DorsoLateral-PalmaroMedial oblique (B) views of the left metacarpus of a 4-year-old, Thoroughbred mare with lameness.

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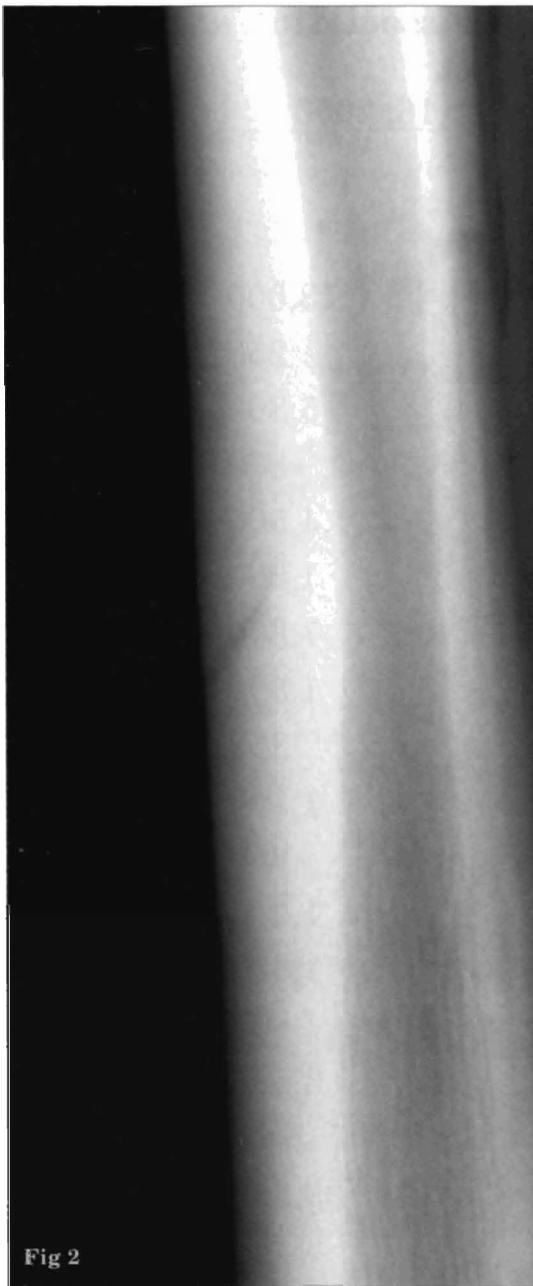


Fig 2

Figure 2. Close up view of the isolated dorsolateral cortex of the third metacarpus. This close up is taken from the PalmaroLateral-DorsoMedial oblique projection.

bone formation are not evident. (Fig.2)

Radiographic Diagnosis and Discussion

Dorsal cortical stress fracture of the third metacarpal bone. Dorsal cortical stress fracture of the third metacarpal bone is a moderately common injury of the young Thoroughbred in race training. Three-year old males are noted to be particularly affected and the left metacarpus is most frequently fractured. The dorsal cortical stress fracture is considered to be one subset of the response of the dorsal cortex of the metacarpus to repetitive bending stresses. Mild to moderate periosteal new bone reaction can also be seen with or without fracture. This type of stress fracture can be very subtle requiring detail radiography or xeroradiography using incrementally oblique projections. Nuclear scintigraphy is quite sensitive in detection of abnormal bone activity associated with these fractures earlier than they can be demonstrated radiographically. ♦

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