Case 2

Figure 1—Lateromedial radiographic view of the right distal phalanx of a 7-year-old Appaloosa with bilateral forelimb lameness of 1 month's duration.

History

A 7-year-old Appaloosa was evaluated for a progressive forelimb lameness that failed to resolve after 1 month's rest. Examination of the hoof by use of hoof testers revealed signs of pain when the hoof tester was applied from the center of the frog to the axial and abaxial walls of the hooves of the forelimbs.

The horse had a grade 3/5 lameness in the left forelimb that worsened to a grade 4/5 when the horse was trotted in a circle to the left. Flexion of the lower portions of both forelimbs also caused an increase in the severity of the lameness by one grade. Perineural anesthesia of the palmar digital nerves of the left forelimb eliminated the lameness on that side, but a similar lameness in the right forelimb was then evident, which was eliminated by subsequent perineural anesthesia of the palmar digital nerves on the right forelimb. Radiographs of the navicular bone and distal phalanx were obtained (Fig 1).

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

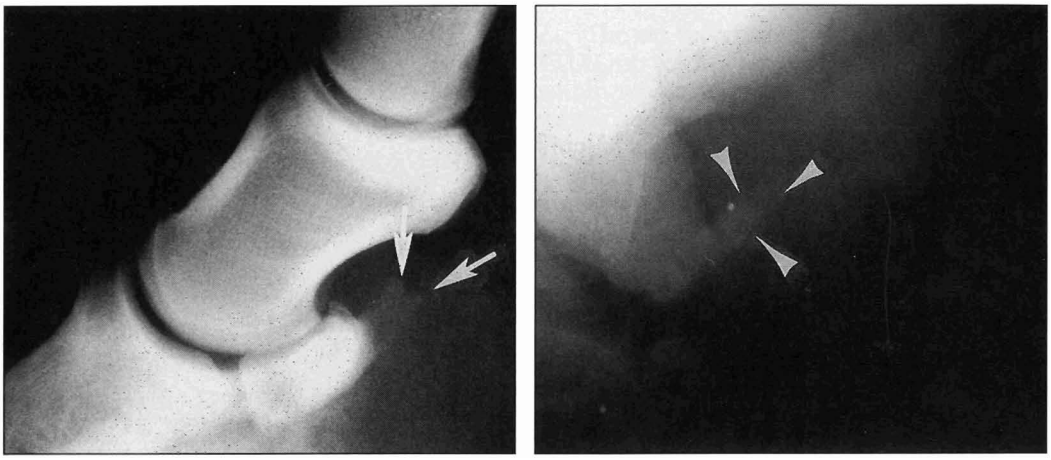

Figure 2—Same lateromedial radiographic view as in Figure 1 (left) and a dorso45°proximo45° lateral-palmaro-distomedial oblique (D45Pr45L-PaDiMO) radiographic view (right) of the distal phalanx and navicular bone of the right forelimb. Notice the large elongated mineral opacity (arrows) extending from the navicular bone on the lateromedial view, the extent of which can be seen on the D45Pr45L-PaDiMO view (arrowheads).

Diagnosis

Radiographic diagnosis—A large, elongated mineral opacity extending proximal from the navicular bone.

Comments

Mineral opacities near the proximal aspect of the navicular bone may be associated with dystrophic mineralization of the deep digital flexor tendon, new bone production at the insertion of the collateral suspensory navicular ligaments (enthesophytes), or peri-articular osteophyte development at the proximal navicular surface.[1] Mineralization within the deep digital flexor tendon, found in horses with navicular syndrome, is thought to be a response to a primary pathologic process developing in the flexor cortex of the navicular bone.[2] Enthesophytes involving the collateral suspensory ligaments along the navicular bone have been found in clinically normal horses[3] and are sometimes considered part of the aging process.[4] However, enthesophytes that develop in younger horses or are extensive (as in the horse of this report) should be considered important, especially when accompanied by lameness.[5] Enthesophytes of the navicular bone may be unilateral or bilateral. The lateral aspect is more commonly involved if the process is unilateral. Horses with a lateral enthesopathy most often have a severe lameness.[6] Periarticular osteophytes are seen radiographically as a pointed border of the navicular bone adjacent to the middle phalanx, and their importance in navicular disease is unproven.[3]

The radiographic views used most often for evaluation of the navicular bone of the forelimb include a **dorsoproximolateral-palmarodistomedial oblique (DPrL-PaDiMO)** taken at 45° and 65° and **palmaroproximal (PaPr)-PaDiO**. In the horse of this report, the D65Pr-PaDiO and the Pa45Pr-PaDiO views (not shown) revealed cyst-like lesions within the central region of the navicular bone and lysis of the flexor surface, respectively. Additional radiographic views (D45Pr45L-PaDiMO [Fig 2] and D45Pr45M-PaDiLO) were obtained to help elucidate the extent and location of the mineralized soft tissue proximal to the navicular bone and to distinguish it from dystrophic mineralization within the deep digital flexor tendon. Although these views are not routinely obtained when evaluating the navicular bone, they were useful in defining the lesion in the horse of this report.

The importance of the radiographic appearance of the navicular bone in establishing a diagnosis of navicular syndrome is controversial, and the clinician must always correlate these findings with clinical signs.[7] In the horse of this report, results of the physical examination, response to perineural anesthesia, and the severe radiographic changes associated with the navicular bone led to a diagnosis of severe navicular syndrome. Treatment options were limited because of the extent of the disease, and treatment was directed toward making the horse comfortable. Palmar digital neurectomy was a less viable option for treatment of this horse because of the extent of the bony changes. The owners treated the horse by providing corrective shoeing and administering nonsteroidal anti-inflammatory agents.

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