Osteitis/Osteomyelitis of the Axial Border of the Proximal Sesamoid Bones in Horses

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Osteitis of the axial border of the proximal sesamoid bones and associated intersesamoidian ligament desmitis causes a progressive, intermittent lameness in horses which can be a diagnostic challenge. Arthroscopic debridement of the boney and ligamentous lesion results in return to full performance in nonseptic cases. Authors’ address: Texas Veterinary Medical Center, College of Veterinary Medicine, Texas A&M University, College Station, TX 77843-4475; Marion duPont Scott Equine Medical Center, Leesburg, VA 22075. © 1999 AAEP.

1. Introduction

Proximal sesamoid bone injuries have been well-documented in racehorses with sesamoid fracture and sesamoiditis being most common and usually secondary to trauma.1 Osteitis/osteomyelitis of the axial border of the proximal sesamoid bones is rare, and is usually described as being secondary to sepsis of fetlock joint or the digital tendon sheath.2 Osteomyelitis of the axial border of the proximal sesamoid bones have been described with about half of the cases caused by septic arthritis or septic tenosynovitis.2 Despite treatment which may include joint lavage, antibiotics, isoxsuprine and anti-inflammatory drugs, there is a grave prognosis for horses with axial border osteomyelitis/osteitis of the proximal sesamoid bones.3

The purpose of this report is to describe clinical, radiographic, and scintigraphy findings and outcome after medical or surgical treatment in horses with both septic and nonseptic osteitis/osteomyelitis of the axial border of the proximal sesamoid bones with intersesamoidian ligament desmitis.

2. Materials and Methods

Case records of horses with radiographic lesions consisting of ulcerative erosions along the axial border of the proximal sesamoid bones were retrieved from the hospital records. Information obtained from the medical records included signalment, use, affected limb, severity and duration of lameness, diagnostic tests including nerve blocks, radiographic, ultrasound and scintigraphy findings, and outcome with and without arthroscopic surgical treatment. Follow-up information was obtained from repeat examination of the horses and by telephone interview with the owners. The outcome was considered successful if the horse returned to its previous performance use at the same level as before injury.
3. Results

Nine horses were included in the study. Ages ranged from 1 to 14 years old. All horses had a history of chronic lameness (range 3 weeks to 9 weeks) prior to presentation. All horses had unilateral limb involvement with more horses affected on the rear limb than the front limb, and more horses were affected on the left than the right. The median grade of lameness at presentation was III of V. None of the horses responded to a posterior digital or abaxial nerve block but 4 horses improved dramatically after a low 4-point nerve block. Three horses showed no improvement after intra-articular metacarpophalangeal anesthesia but responded to the 4-point block or anesthesia of the digital tendon sheath. Radiographs in all cases revealed various degrees of osteolysis along the axial border of medial and lateral proximal sesamoid bones in the involved limb. The proximal aspect of the eproximal sesamoid bones were involved in the majority of cases and the osteolysis involved up to half of the axial margin of the bone.

Treatment in 8 horses consisted of arthroscopic evaluation of both palmar pouch of the metacarpophalangeal joint and digital tendon sheath. Joint and tendon sheath fluid was obtained and revealed more horses with nonsuppurative synovitis than septic arthritis or septic tenosynovitis. Criteria for sepsis was joint or tendon sheath cytology with greater than 30,000 white blood cells, greater than 50% polymorphonuclear cells, bacteria seen, or a positive bacteria culture. Culture of the joint and/or tendon sheath fluid or bone was positive for bacteria in 4 cases. Arthroscopic evaluation revealed an osteochondral defect along the axial margin of the proximal sesamoid at the attachment of the intersesamoidian ligament, which was discolored in all cases at the site of boney lysis. Histologic evaluation revealed chronic inflammation and granulation tissue with thrombosis of the microvasculature within the intersesamoidian ligament. Arthroscopic curettage and intersesamoidian ligament debridement was performed in all cases with lavage of both tendon sheath and fetlock joint.

Peri-operative medications included systemic antibiotics for 3 days in the nonseptic cases but were continued for 30 days in the septic cases. Generally, 6 weeks of stall confinement followed by 6 weeks of small paddock exercise was recommended after surgery. Recovery time was 7 to 12 months. At follow-up, one horse given only medical treatment had increased lameness. Nonseptic horses treated surgically returned to previous performance. Half of the horses with a septic joint or tendon sheath responded to surgical treatment, but did not return to complete soundness. In the other septic cases, response to surgical treatment was extremely poor.

4. Discussion

From the cases in this report it appears that at least two different syndromes exist resulting in the described radiographic lesion. All cases had similar history of a chronic lameness (grade III of V). All required diagnostic nerve blocks to localize the source of lameness, although variations existed in the anesthetic location required to resolve the lameness. All showed radiographic lesions of osteolysis along the axial margin of the proximal sesamoid bones. Nuclear scintigraphy was beneficial in these cases to localize the inflammation to the proximal sesamoid bones. Arthrocentesis, cytology and bacterial culture confirmed a nonseptic etiology in more than half the horses. All responded to surgical debridement and returned to previous use. Histologic evaluation of the osteomalacic sesamoid and damaged intersesamoidian ligament suggests a chronic inflammatory or perhaps ischemic event which could be secondary to trauma.

As expected, outcome for the septic cases was not as good as with the nonseptic cases. When sepsis could be resolved after surgical treatment, the horses did improve in severity of lameness but secondary degenerative changes within the joint prevented complete soundness. The horse treated only by medical management had a progression of the lameness. This is in agreement with previous reports suggesting a poor prognosis for medical management of these cases. Nonseptic osteolysis of the axial border of proximal sesamoids and intersesamoidian ligament desmitis appears to be a recently recognized lameness disease process and is best treated by arthroscopic debridement.

References