



What Is Your Diagnosis?

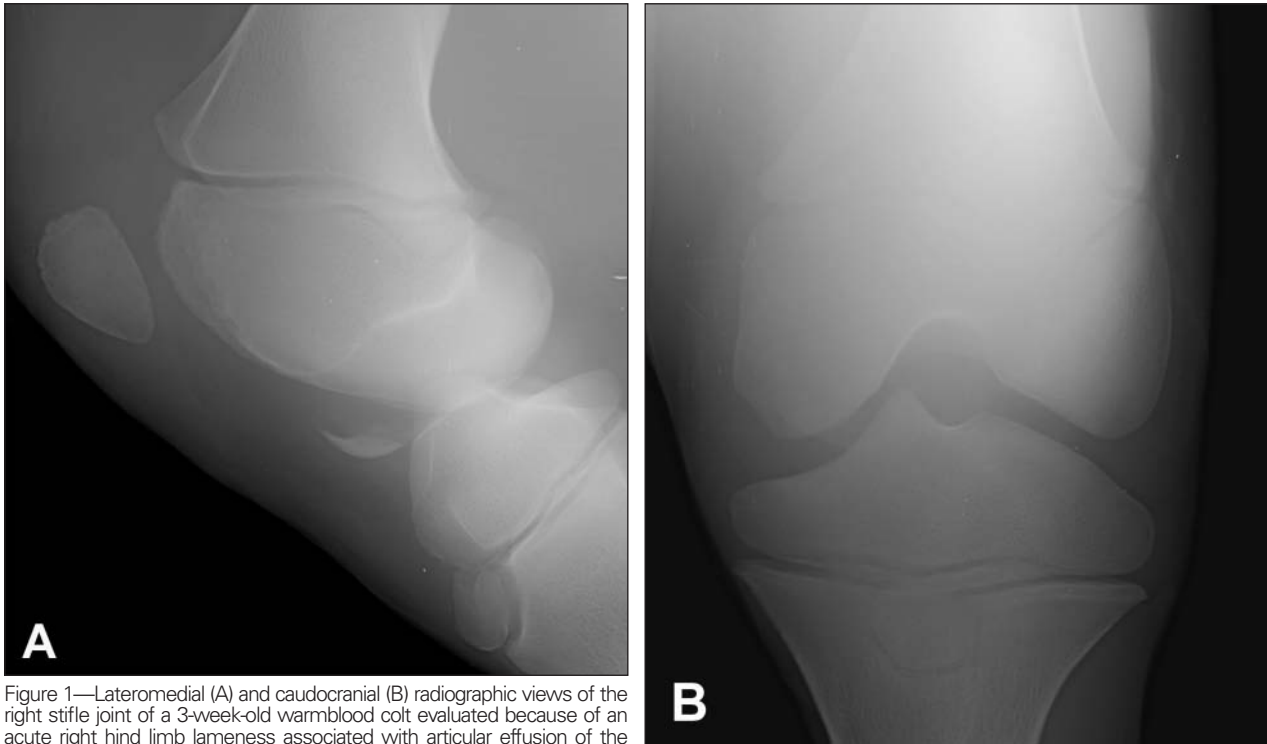


Figure 1—Lateromedial (A) and caudocranial (B) radiographic views of the right stifle joint of a 3-week-old warmblood colt evaluated because of an acute right hind limb lameness associated with articular effusion of the stifle joint.

History

A 3-week-old warmblood colt was evaluated because of acute periarticular swelling involving the left tarsus. On initial evaluation, the foal had grade 3 of 5 left hind limb lameness and periarticular swelling over the tarsus, which was accentuated over the medial aspect of the distal portion of the tibia. The left tarsocrural joint was moderately effusive. Cytologic evaluation of synovial fluid collected via arthrocentesis revealed inflammatory changes indicative of a septic process. Radiographic findings of the left tarsus were consistent with septic physisitis involving the medial aspect of the distal physis of the tibia. Results of palpation were normal for all other articulations. The umbilical structures and lower respiratory tract were closely evaluated, but a primary site of infection was not identified. The septic physisitis of the left distal portion of the tibia was treated via tarsocrural joint lavage and local and systemic antimicrobial treatment regimens. The foal responded well to the initiated treatment. On day 3 of hospitalization, however, marked articular effusion of the right femoropatellar and medial femorotibial joints was noted. The left hind limb lameness had greatly improved, and a grade 3 of 5 right hind limb lameness was now present. Cytologic evaluation of synovial fluid collected via arthrocentesis from the medial femorotibial joint revealed slightly turbid, straw-colored synovial fluid with reduced viscosity. Results of the fluid analysis (total protein concentration, 32 g/L; total nucleated cell count, 1.58×10^9 cells/L; 40% neutrophils) were indicative of an inflammatory but not a septic process. No other abnormalities were detected on physical examination. Radiographs of the right stifle joint were obtained (Figure 1).

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

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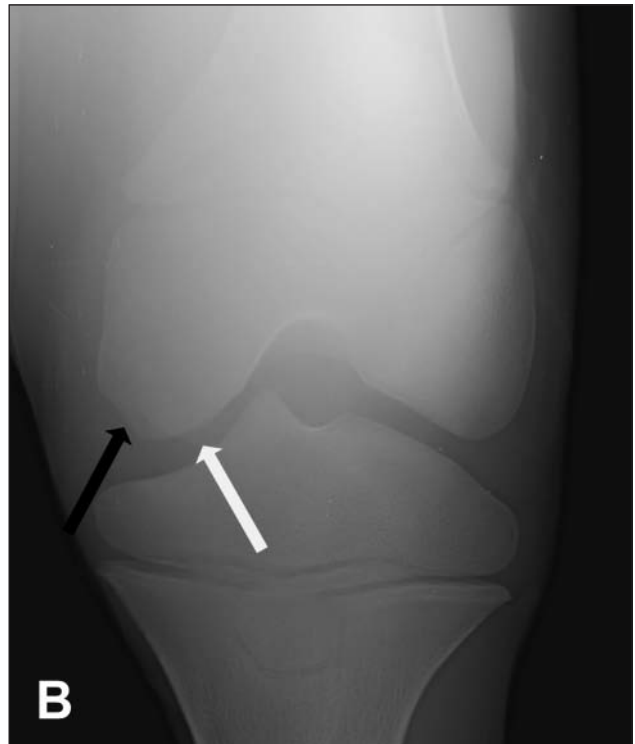
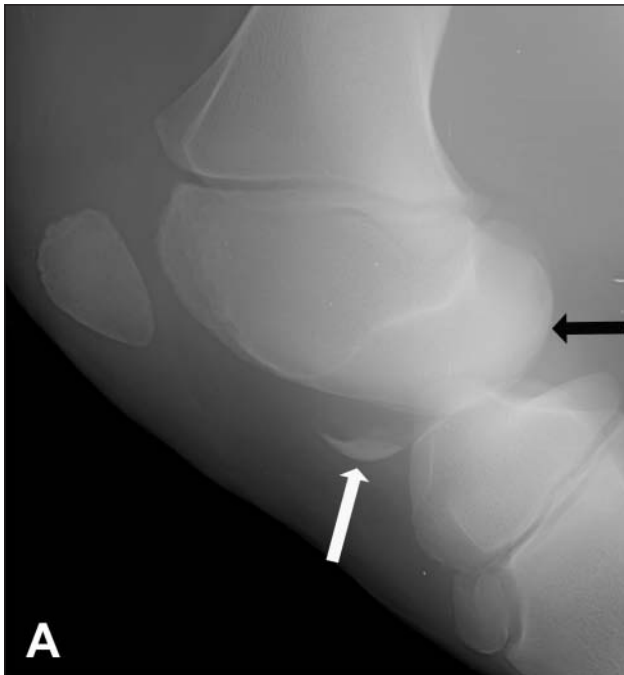


Figure 2—Same radiographic images as in Figure 1. A displaced, shell-shaped, sharply delineated intraarticular fragment (white arrows) cranial and medial to the intercondylar eminence of the proximal tibia is appreciable. The roughened and less rounded contour of the weight-bearing and caudal aspects of the medial femoral condyle (black arrows) was interpreted as a fracture bed. The irregularities involving the contour of the patella and each trochlea of the femur appear normal, considering the age of the foal.

Imaging Findings and Interpretation

A large, shell-shaped osteochondral fragment within the cranial compartment of the medial femorotibial joint is evident (Figure 2). The fragment appears to be originating from the medial femoral condyle. Considering the age of the foal, the marked irregularities of the lateral trochlear ridge represent normal endochondral ossification. On the basis of these findings, a diagnosis of a severe osteochondritis dissecans (OCD) lesion involving the weight-bearing surface of the medial condyle of the femur was made. Radiographs of the left stifle joint were unremarkable.

A caudolateral-craniomedial oblique view of the right stifle joint of this foal would have been helpful to better delineate the articular surface of the medial condyle. A CT study was performed to further assess the extent of the lesion involving the right stifle joint (Figure 3). As a differential diagnosis, an osteochondral fragment of traumatic origin was considered.

Comments

Osteochondritis dissecans lesions of the stifle joint most commonly involve the lateral trochlear ridge of the femur and less frequently the medial trochlear ridge, patella, or trochlear groove.¹ Subchondral bone cysts situated at the weight-bearing surface of the medial femoral condyle are also thought to represent a form of osteochondrosis.

Reports on OCD lesions involving the femoral condyles in foals are rare. One case report² describes bi-

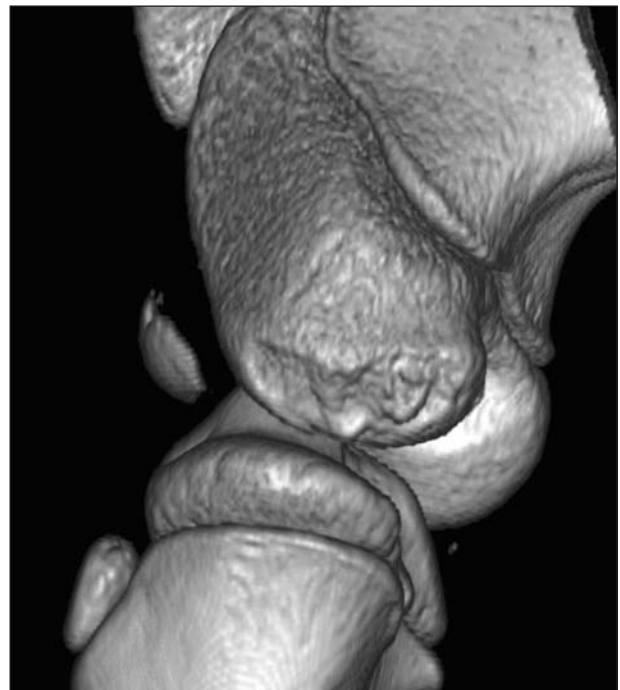


Figure 3—Three-dimensional volumetric image reconstruction of a CT scan of the right stifle joint, as viewed from a caudolateral and slightly distal perspective. Notice the extensive deformation of the medial femoral condyle.

lateral lesions involving the lateral femoral condyles of an 8-month-old filly. In a previous report³ on 20 foals, lesions of the femoral condyles were classified into 3 subtypes on the basis of radiographic appearance. Type I lesions represented focal epiphyseal lysis, which was clearly associated with septic osteomyelitis and arthri-

tis. Type II and III lesions were described as localized osseous irregularities involving < 50% or ≥ 50% of the condylar articular surface, respectively. On the basis of the clinical findings and results of synovial fluid analysis and necropsy, the authors speculated that the cause of type II and III lesions represented a disruption or delay in endochondral ossification, thus belonging to the osteochondrosis complex. Findings in the foal of the present report are very much in agreement with the observations made by the investigators of the previous report.³ Adapting the proposed classification scheme, the lesions involving the medial femoral condyle of the foal of the present report would be categorized as type III. Interestingly, as was the case with the foal of the present report, 5 of the 8 foals in the previous report with type III lesions had a history of illness with a septic component. Hence, speculations of a thromboembolic etiopathogenesis to the described lesions of the femoral condyle were made.³

Unlike in the previous case series,³ in which foals with type III lesions were severely lame, the foal of the present report had only mild to moderate lameness of the affected limb. We speculate that the large osteochondral fragment had been dislodged for only a short duration, considering that the foal was closely monitored for articular effusion during its hospital stay prior to the onset of clinical signs involving the right stifle joint. Furthermore, increased weight bearing on the right hind extremity, owing to the preceding lameness on the contralateral limb, may have induced dislodging of the fragment. With time and progression of the

inflammatory response, a more severe lameness would have been expected.

Computed tomography provides valuable additional information for diagnosing stifle joint injuries.⁴ In the foal of the present report, it allowed accurate assessment of the extent of the lesion, with implications for making an accurate prognosis or when considering surgical intervention. Considering the widespread deformation of the weight-bearing articular surface and loss of congruity of the joint, the prognosis for future athletic function is poor, regardless of treatment method. Because the foal of the present report had been expected to eventually perform as a high-level sport horse, the owners elected to have the foal euthanized.

Findings of postmortem histologic evaluation of the joint lesion were consistent with OCD. Inflammatory infiltrates were not prominent in any sections of the subchondral bone examined, making a septic event unlikely.

1. McIlwraith CW, Martin GS. Arthroscopic surgery for the treatment of osteochondritis dissecans in the equine femoropatellar joint. *Vet Surg* 1985;14:105–116.
2. Stowater JL, Kirker-Head CA, Jakowski RM. Osteochondrosis in the lateral femoral condyles of a horse. *Vet Radiol* 1986;4:115–117.
3. Hance SR, Schneider RK, Embertson RM, et al. Lesions of the caudal aspect of the femoral condyles in foals: 20 cases (1980–1990). *J Am Vet Med Assoc* 1993;4:637–646.
4. Bergman EHJ, Puchalski SM, Van der Veen H, et al. Computed tomography and computed tomography arthrography of the equine stifle: technique and preliminary results in 16 clinical cases, in *Proceedings*. 53rd Annu Meet Am Assoc Equine Pract 2007;46–55.