



The Clinical Picture

Acute onset of knee pain

Q: A 60-YEAR-OLD WOMAN presented because of recent onset of left knee pain on the medial aspect and no history of a traumatic event. She is otherwise healthy without a significant medical or surgical history. Clinical examination revealed a small joint effusion and tenderness with palpation on the medial side of the knee above the joint line. FIGURE 1 shows a frontal view radiograph of both knees with the patient standing.

Which is the correct diagnosis given the patient's history and radiographic findings?

- ☐ Crystalline disease
- ☐ Avascular necrosis with subchondral fracture and mild collapse
- ☐ Anserine bursitis
- ☐ Metastatic bone disease
- ☐ Septic arthritis

A: The correct diagnosis is avascular necrosis with subchondral fracture and collapse of the medial aspect of the femoral condyle.

Crystalline disease, like avascular necrosis, can occur abruptly, and septic arthritis may occur in the absence of systemic features. In this patient, however, crystalline disease and septic arthritis would have been considered only if the radiographic findings had been negative. In that case, joint fluid analysis would be crucial.

The absence of more systemic symptoms and the lack of a significant medical or surgical history make the diagnosis of metastatic bone disease unlikely in this patient.

Anserine bursitis is the inflammation of pes anserinus which lies under the conjoined tendon of the sartorius, gracilis, and semitendinous muscles at its insertion on the upper medial aspect of the tibia. The physical examination is characterized by marked tenderness over the tibia, 2 inches below the medial joint margin, which was not present in this case.



FIGURE 1

Typical presentation

Avascular necrosis of the knee or spontaneous osteonecrosis is not unusual in a woman older than 60. The symptoms most often occur so abruptly that the patient remembers exactly when this began.^{1,2} However, the patient usually does not recall a significant traumatic event that might have triggered the symptoms.

The lesion involves the inferior aspect of the medial femoral condyle (FIGURE 1, arrows), although it can rarely involve the medial aspect of the tibial plateau or the lateral aspect of the femoral condyle. Spontaneous osteonecrosis is felt to be secondary to a repetitive mechanical event, eg, normal stress activity that results in microfractures, which in turn induce ischemia.

The radiographic picture

Radiographic findings vary depending on the stage of the lesion.² Initially, radiographs may be completely normal. (At this stage, magnetic resonance imaging can provide very sensitive and specific findings of avas-



cular necrosis.³⁾ In a matter of several weeks, flattening of the subchondral bone may occur in addition to abnormal findings in the trabecular bone. Most of the time, this trabecular abnormality is characterized radiographically by a radiolucency surrounded by an area of increased sclerosis.

Prognosis

The prognosis of this lesion depends on the size. In the early stage of osteonecrosis, nonsurgical treatment includes non-weight bearing and analgesics. In patients with more advanced disease, however, treatment options include lesion debridement, high tibial osteoto-

my, osteochondral allograft, and unicompartmental or total knee arthroplasty.

REFERENCES

1. **Ahlback S, Bauer GCH, Böhne WH.** Spontaneous osteonecrosis of the knee. *Arthritis Rheum* 1968; 11:705–733.
2. **Lotke PA, Ecker ML.** Osteonecrosis of the knee. *J Bone Joint Surg Am* 1988; 70:470–473.
3. **Pollack MS, Dalinka MK, Kressel HY, Lotke PA, Sprintzer CE.** Magnetic resonance imaging in the evaluation of suspected osteonecrosis of the knee. *Skeletal Radiol* 1987; 16:121–127.

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