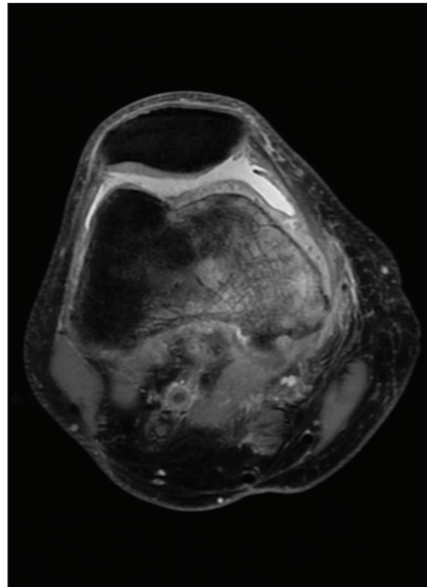


**FIGURE 1.** Coronal, fat-suppressed, proton density-weighted magnetic resonance image of the right knee, demonstrating subchondral bone collapse (arrow), bone marrow edema, and osteopenia of the medial femoral condyle extending into the metaphysis.



**FIGURE 2.** Axial, fat-suppressed, proton density-weighted magnetic resonance image of the right knee, demonstrating significant bone marrow edema and osteopenia of the medial femoral condyle.



**FIGURE 3.** Sagittal, fat-suppressed, T2-weighted magnetic resonance image of the right knee, demonstrating cortical irregularity of the medial femoral condyle and curvilinear hypointensity at the articular surface (arrows).

## Spontaneous Osteonecrosis of the Knee

**JUSTIN BITTNER**, PT, DPT, OCS, *Outpatient Therapy Services, Western Maryland Health System, Cumberland, MD.*

**AARON HARTSTEIN**, PT, DPT, OCS, FAAOMPT, *Shenandoah University Doctoral Program in Physical Therapy, Winchester, VA.*

**A** 69-YEAR-OLD MAN WAS REFERRED to physical therapy by his primary care physician for an insidious onset of right medial knee pain that had been present for over 4 weeks. Primary complaints included knee pain of 6/10 on the numeric pain-rating scale, swelling, and limited knee range of motion (ROM). He reported full but painful function with activities of daily living, recreational hiking, and his gym routine consisting of aerobic and resistance training (5 days per week). His past medical history was unremarkable.

Physical examination revealed joint effusion, limited flexion and extension ROM, quadriceps weakness, and limited weight-bearing tolerance consistent with a clinical diagnosis of osteoarthritis. He was

instructed in non-weight-bearing lower extremity strengthening and ROM exercises and in self-mobilization techniques.

One week later, symptoms worsened, with a numeric pain-rating scale score of 8/10, decreased weight-bearing tolerance, and warmth to palpation, without constitutional signs or symptoms. Due to the disproportionate response following seemingly benign initial management, he was referred to an orthopaedist for imaging, with suspicion of an articular lesion.

Magnetic resonance imaging revealed medial femoral condyle osteopenia, bone marrow edema, and subchondral bone collapse (FIGURES 1 and 2). He was diagnosed with spontaneous osteonecrosis of the knee, with associated impaction fracturing (FIGURE 3).

Four weeks of non-weight bearing and immobilization in extension, as recommended by the orthopaedist, produced a significant reduction in pain with functional activities. Currently, he has resumed gym routines 3 days per week and performs activities of daily living pain free.

Clinicians should be aware of rare differential diagnoses of common knee pain presentation that worsen after initial conservative treatment. In this case, worsening symptoms and appropriate clinical decision making led to magnetic resonance imaging, which showed spontaneous osteonecrosis of the knee and altered the clinician's management of the patient. ● *J Orthop Sports Phys Ther* 2018;48(10):824. doi:10.2519/jospt.2018.7923