Stress Reaction of the Humerus in a High School Baseball Player

ALAN GONZALEZ-ZAPATA, MD, Department of Orthopaedic Surgery, The Johns Hopkins University, Baltimore, MD. 
FILIPPO FAMILIARI, MD, Department of Orthopaedic Surgery, The Johns Hopkins University, Baltimore, MD. 
EDWARD G. MCFARLAND, MD, Department of Orthopaedic Surgery, The Johns Hopkins University, Baltimore, MD.

The patient was an 18-year-old man with a chief complaint of right arm pain in the region of his right distal humerus that began 8 weeks earlier. The patient was right-hand dominant and a pitcher on his high school baseball team. His right arm pain worsened significantly after pitching in the last game of the season, and his parents scheduled an appointment with an orthopaedic surgeon that the patient had seen previously for unrelated musculoskeletal problems.

At the time of the initial evaluation with the orthopaedic surgeon, the right shoulder and elbow exhibited full pain-free range of motion and normal strength. Ligamentous testing at the shoulder and elbow, as well as labral testing at the shoulder, was also normal. However, exquisite tenderness to palpation was noted over the humerus at the junction of the middle and distal thirds.

Because of the unusual location of the patient’s pain and suspicion of a stress lesion, conventional radiographs were obtained (anteroposterior and lateral views of the humerus), which were interpreted as normal (FIGURE 1).2 As a result, magnetic resonance imaging was obtained, which showed a hyperintense bone marrow signal in the distal humerus on fluid-sensitive sequences (FIGURE 2), which was consistent with a stress reaction of the distal humerus.1,2 After 8 weeks of avoiding throwing activities, the patient was pain free and was able to successfully return to throwing activities without any limitations or difficulties. 

References

FIGURE 1. An anteroposterior radiograph of the right humerus that was interpreted as normal.

FIGURE 2. Coronal short-tau inversion recovery magnetic resonance image demonstrating a hyperintense bone marrow signal in the distal humerus, which was consistent with a stress reaction (arrow).