A Painful Shoulder
(See page 1667 for Photo Quiz)

Figure 1. CT radiograph of the patient’s left shoulder. White arrows, gas in the soft tissue and joint space.

Figure 2. Photograph of blood agar plate inoculated with aspirated intra-articular joint fluid. Black arrows, “double zone” hemolysis.

Diagnosis: *Clostridium perfringens* septic arthritis.

Although the initial Gram stain of the sample of purulent material obtained from the patient’s shoulder (figure 1) revealed only rare gram-variable rods with no neutrophils, the culture eventually grew *C. perfringens*. The “double zone” of hemolysis seen in figure 2 is very characteristic of *C. perfringens*. The zone of partial hemolysis is due to the α toxin, whereas the inner zone of complete hemolysis is due to the θ toxin [1].

Clostridial infections appear to have a more fulminant course in patients with cancer. A retrospective review of a >12-year period performed at The M.D. Anderson Cancer Center (Houston, TX) found that the overall survival rate for clostridial bacteremia in patients with neoplastic disease was 58% [2]. The investigators also found that the most common underlying malignancies associated with clostridial bacteremia were gastrointestinal malignancies, genitourinary malignancies, and acute leukemia [2].

The entity of clostridial septic arthritis is rare: only 38 previous cases have been reported [3–5]. Most cases reported were associated with a traumatic injury, although 3 cases were thought to be due to hematogenous seeding, of which 1 case occurred in a patient with underlying ovarian cancer. The presence of gas in the joint space was reported for only 5 of the cases. Examination usually revealed erythema, warmth, and a joint effusion, along with painful and limited joint range of motion. Treatment was consistently reported to involve arthrotomy and intravenous penicillin. This therapy appeared to be successful in most cases, only failing in the immunocompromised patients.

Sanjay Mehta
Division of Infectious Diseases,
University of Maryland Medical System,
Baltimore, Maryland

References
