The intracellular and extracellular Gram-negative diplococci were identified as beta-lactamase-negative Neisseria meningitidis by the API NH system (bioMérieux, Durham, NC) and further serotyped as group Y at the Illinois Department of Public Health. No organisms were isolated from the peripheral blood. Results of screening for HIV, hepatitis virus, Chlamydia trachomatis, and gonococcus were negative.

N. meningitidis is a Gram-negative diplococcus that commonly results in acute meningococcemia and meningitis. This organism is further classified on the basis of its capsular polysaccharide into 12 serogroups, of which serogroups A, B, C, W-135, X, and Y have been implicated in the majority of infections (1). Most infections in the United States are attributable to serogroups B, C, and Y (2). Approximately 5 to 20% of adults are asymptomatic nasopharyngeal carriers of this obligate human pathogen, and the majority of adults demonstrate measurable antibodies against the most pathogenic serogroups (2). Concurrent septic arthritis has been described in approximately 11% of cases with meningococcemia; however, primary meningococcal septic arthritis without meningococcemia rarely appears in case reports in the literature (1, 3, 4). Most examples are monoarticular, but polyarticular joint involvement has also been described (3). Patients with opsonizing dysfunction related to functional or anatomical splenic abnormalities or complement deficiencies are more likely to suffer from invasive meningococcal disease (2). In the present case, no predisposing factors were identified. Total complement, C3, and C4 levels measured at the time of active disease were low, but low levels are likely to represent a consumptive process inherent in the acute host response (2). In contrast to treatment of Neisseria gonorrhoeae infection, the patient and all of their close contacts, including health care providers, irrespective of their immunization status, must be given appropriate antibiotic therapy. In the present case, the patient was empirically started on intravenous ceftriaxone and oral doxycycline. Based on laboratory culture results, the infectious disease consultation team recommended intravenous ceftriaxone therapy for 10 days. Despite the appropriate antibiotic regimen, this patient developed recurrent right shoulder joint pain and effusion within 1 week of discharge and underwent an arthroscopic incision and drainage of the joint. The clinical details of this case have been previously reported (5). This clinical behavior is unlike that of Neisseria-associated gonococcal arthritis, which generally responds adequately to medical therapy alone (5, 6). In conclusion, although N. gonorrhoeae is the most likely pathogen in joint infections with Gram-negative diplococci, it is also important to consider the admittedly rare but important pathogen N. meningitidis. In a retrospective review of institutional records over the past 15 years of positive N. meningitidis cultures from sterile sites, this isolation from joint fluid is unique.

REFERENCES