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ACUTE RHEUMATIC FEVER: CASE REPORT AND REVIEW FOR EMERGENCY PHYSICIANS

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□ **Abstract—Background: Acute rheumatic fever (ARF), a consequence of group A streptococcal (GAS) pharyngitis, is characterized by nonsuppurative inflammatory lesions of the joints as well as subcutaneous and cardiac tissues. Although the overall incidence of ARF in the United States has declined in recent years, there have been reports of outbreaks in closed populations, as well as sporadic cases. Traditionally considered a disease of children, adults may also acquire the disease. Because of declining incidence and a presentation that may overlap with other conditions, ARF may not be considered in the differential diagnosis. Failure to recognize ARF may result in delayed diagnosis and recurrent disease. Objective: This report is designed to assist emergency physicians in identifying components of the history and physical examination that are important to making a timely diagnosis of ARF. Case Report: An otherwise healthy man presented to the emergency department (ED) with clinical findings consistent with ARF. Despite presentation to the ED on three occasions, during which he was treated for various conditions, it was not until the 3rd encounter that the diagnosis of ARF was considered. Conclusion: Failure to recognize ARF may result in repeated ED visits, delayed diagnosis, and prolonged patient discomfort. Recognition of the condition is important to prevent recurrent disease.** © 2013 Elsevier Inc.

□ **Keywords—acute rheumatic fever; rheumatic fever; emergency medicine; arthritis; group A streptococcus; pharyngitis**

INTRODUCTION

Acute rheumatic fever (ARF) is an inflammatory condition of joints and subcutaneous tissue that also occasionally affects the heart and central nervous system (1–3). The disease is the result of an autoimmune response to infection with group A streptococci (GAS), most commonly pharyngitis (2,3). Even though the incidence of ARF in the United States (US) and other developed countries has declined in recent years, the disease continues to afflict persons in developing countries, and sporadic cases in the US do occur (4–9). As a result, physicians practicing in developed countries may not consider ARF in a patient presenting with typical manifestations of the disease. Timely diagnosis is important for acute therapy and patient comfort and for prescribing antibiotic prophylaxis to prevent recurrent GAS infection (1). We report the case of a patient with ARF in whom the diagnosis was not considered, resulting in repeated emergency department (ED) visits and delayed treatment.

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CASE REPORT

A 27-year-old man presented to the ED after experiencing pain and swelling of his left knee for 48 h. There was no recent trauma to the knee. Further questioning revealed that the patient previously had several days of joint pain, involving his elbows, hips, knees, and ankles. He reported that those arthralgias subsided in response to an over-the-counter nonsteroidal anti-inflammatory drug (NSAID). The presenting left knee pain occurred after the patient discontinued the NSAID. Examination showed an oral temperature of 36.2°C (97.2° F), a pulse of 88 beats/min, a respiratory rate of 16 breaths/min, and blood pressure of 127/72 mm Hg. There was no joint edema, deformity, or restricted range of motion. Mild tenderness was noted over the medial aspect of the left knee. Assays for human immunodeficiency virus (HIV), *Neisseria gonorrhea*, and *Chlamydia trachomatis* were negative. The patient was discharged from the ED with a diagnosis of chronic arthritic pain. He was prescribed a narcotic analgesic.

Nine days later, the patient returned to the same ED because of increased left knee pain. No recent history of fever, sore throat, or constitutional symptoms was elicited. There was a 3-cm, tender induration of the left infrapatellar area. There were no deformities, pain, or restricted motion of other joints. The patient was discharged from the ED with a diagnosis of cellulitis. He was prescribed oral clindamycin.

Five days later, he returned to the same ED with pain and decreased range of motion of his ankles, wrists, knees, and right shoulder. He also reported "knots" located in his upper extremities. Physical examination now showed erythema, tenderness, and edema of the wrists, knees, and ankles, as well as decreased range of motion of the right shoulder. Blanching erythematous plaques on the trunk were noted, as were subcutaneous nodules on both arms (Figure 1). No cardiac or neurologic abnormalities were described. An infectious diseases consultant suspected ARF based on the history and physical examination findings, which were consistent with the revised Jones criteria for the diagnosis of ARF (10) (Table 1).

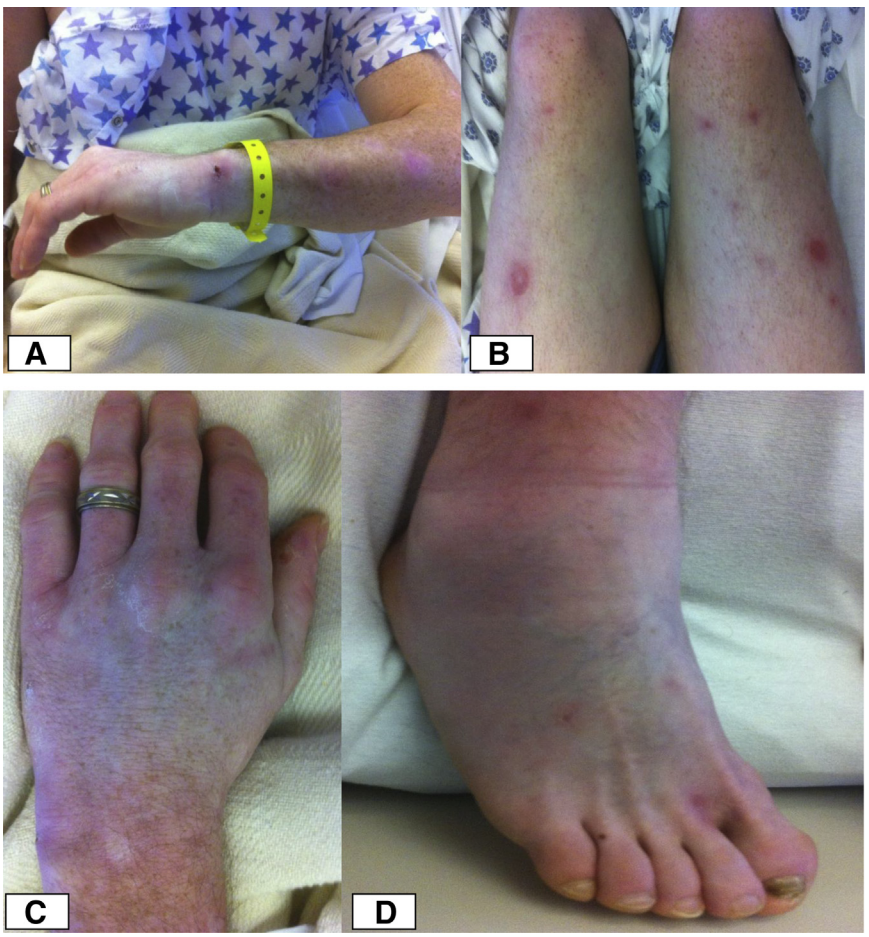

Figure 1. Physical examination findings of patient with ARF. (A and B) Subcutaneous nodules of the left arm and legs. (C and D) Swelling of the wrist and ankle joints.