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Adult-Onset Still's Disease Mimicking Acute Rheumatic Fever

Akut Romatizmal Ateş'i Taklit Eden Erişkin Still Hastalığı

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Introduction

Adult-onset Still's disease (AOSD) is a rare systemic inflammatory disease with unknown origin and pathogenesis. This disease has similar features to the systemic form of juvenile Still's disease. Because it does not have specific laboratory findings, AOSD is a diagnosis of exclusion. The prevalence of the disease is 0.4/100,000 (1). Liver, spleen, kidney, and bone marrow involvement is more common, while on the other hand, the heart and lungs are rarely involved (2). We present a case of a patient whose initial complaints were fever, cough, sore throat, chest pain, and migratory polyarthralgia and polyarthritis, which were misdiagnosed as acute rheumatic fever (ARF).

Case Report

In September 2012, a 21-year-old man was admitted to the emergency department of our hospital with complaints of high fever, cough, sore throat, chest pain, polyarthralgia and polyarthritis involving the wrists, knees, ankles, and proximal interphalangeal joints, and progressive weight loss of 6 kg in 2 months. These symptoms had existed for 1 week. Before being admitted to our hospital, the patient had been administered oral antibiotics (ampicillin + sulbactam 1 gram twice a day perorally), but his complaints did not diminish after the antibiotic treatment. On the contrary, his joint pain and swelling were obvious and had increased on his wrists and knees. He was hospitalized in the infectious diseases department to investigate the fever of unknown origin (FUO). His family history and previous medical history were unremarkable; yet, when we deepened his history, we learned that the patient had visited different hospitals with similar symptoms 3 and 7 years ago and had been given different antibiotics; he did not remember their names. On physical examination, we found fever: 39°C; heart rate: 125/min; and blood pressure: 120/80 mmHg. The patient had acute synovitis and symmetric restriction of movement of the wrists, knees, ankles, and proximal interphalangeal joint (PIP). He had inspiratory crackles in the right lower chest. Examination of the abdomen and central and peripheral nervous system was unremarkable. Investigations for his pyrexia were negative for blood culture, urine cultures, and stool and throat cultures. Hematological investigations revealed leukocytes: 13,900/mm^3 (4000-10,000/mm^3), Hb: 11 g/dL (13.5-18 g/dL), Hct: 32.6% (42-52); thrombocytes: 533,000/mm^3; erythrocyte sedimentation rate: 109 mm/hour (0-30 mm/hour); C-reactive protein: 227 mg/L (0-8 mg/L); prothrombin time (PT): 15 sec (10-14 sec), international normalized ratio (INR): 1.321; aspartate aminotransferase (AST): 59 U/L (5-40 U/L); alanine aminotransferase (ALT): 321 U/L (5-40 U/L); alkaline phosphatase (ALP): 154 U/L (35-125 U/L); gamma-glutamyl transferase (GGT): 168 U/L (10-45 U/L); lactate dehydrogenase (LDH): 556 U/L (200-450 U/L); blood urea nitrogen (BUN): 25 mg/dL (15-44 mg/dL); and creatinine: 0.9 mg/dL (0.6-1.4 mg/dL). Also, his cardiac enzymes were found to be as follows: troponin I: 0.677 (0-0.3), myoglobin: 33.8 (17-154), and CK-MB: 2.6 (0-6.6). The electrolytes, renal parameters, and sugar and thyroid function tests were all found to be normal. The serological tests for salmonella, toxoplasma,

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brucella, syphilis, influenza, EBV, and CMV were found to be negative. Antinuclear antigen (ANA), ASMA, rheumatic factor (RF), antistreptolysin O (ASO), and anti-neutrophil cytoplasmic antibody (ANCA) were also found to be negative.

An abdominopelvic USG showed normal results. The electrocardiography showed normal sinus rhythm, but T negativity was detected. Echocardiography was performed, and no cardiac involvement was detected in the heart valves. The chest X-ray was normal. Because of the high troponin I levels, T negativity in the ECG, and chest pain, pulmonology and cardiology consultations were planned. According to the pulmonology consultation, the patient had no pulmonary pathology. As a result of the cardiology consultation, the patient was considered to have ARF because of migratory polyarthritis, arthralgia, fever, and high ESR and CRP levels; ARF treatment was initiated. The patient was transferred to the cardiology ICU to be followed by cardiologists due to these physical examination and laboratory findings. Penicillin and aspirin were administered to the patient. However, maculopapular skin lesions appeared during the treatment. There was no improvement of his symptoms, so we excluded the diagnosis of ARF. According to the Yamaguchi criteria, the patient was finally diagnosed as AOSD, and pulse steroid was initiated and administered for 3 days. Then, 1 mg/kg prednisolone was initiated, and the dose of prednisolone was reduced. In addition, hydroxychloroquine (200 mg/day) and methotrexate (15 mg/week) were administered to the patient. After the 1-year treatment, the patient was clear of all previous symptoms. His physical examination and laboratory test results were found to be normal.

Discussion

Adult-onset Still's disease is rare systemic inflammatory disease with unknown origin and pathogenesis that typically affects young adults, especially between the ages of 16-35 (3). However, this disease can also be seen in geriatric patients. AOSD typically presents with high spiking fever, arthralgia, and skin rash. Because this disease has no specific clinical findings and laboratory tests, the diagnosis is made after excluding other infectious and autoimmune diseases and malignancies. The clinical presentation of the disease consists of fever, joint symptoms, and salmon-colored rash, which are seen in most AOSD patients. In most patients, fever lasts more than 1 week before treatment. Symmetric and asymmetric polyarthritis is observed in more than 90% of AOSD patients. In addition, the initial synovitis may be fleeting and migratory (4). Cardiopulmonary manifestations of AOSD are rare and include myocarditis, pleural effusion, pericardial effusion, transient pulmonary infiltrates, and pericarditis and seem to be related to proinflammatory cytokines, especially interleukin (IL)-18 (5). Our patient presented with high fever, cough, chest pain, and migratory polyarthritis.

Because of the crackles in the right lower chest, we discussed with pulmonologists whether the patient had pneumonia, but they reported that he had no pulmonary pathology according to his physical examination and X-ray. On the other hand, the leukocyte count, ESR, and CRP were found to be markedly elevated in our patient. The patient was investigated extensively for infectious diseases and malignancies, but no certain diagnosis could be established. Because of his chest pain, migratory arthritis, and ECG findings, the diagnosis of the patient was thought to be ARF after the cardiology consultation. Despite the treatment for ARF, there were no improvements in his symptoms. In addition, maculopapular rash was added to his symptoms. We understood that the patient was misdiagnosed with ARF, and we strongly suspected that the patient had a non-infectious disease. Autoimmune diseases were also investigated and were excluded after the advanced research.

The diagnosis of AOSD is difficult, and Yamaguchi's criteria are the most widely used for the diagnosis. High ESR levels are seen in all AOSD patients, and typically, leukocytosis, normocytic-normochromic anemia, and reactive thrombocytosis are observed. In our case, in the initial laboratory results, there was no anemia or thrombocytosis; yet, on repeats of the blood tests, anemia and reactive thrombocytosis were detected.

In addition, high serum and glycosylated ferritin levels are seen to be characteristic for AOSD, and more than 80% of AOSD patients have high ferritin levels (6,7). Our patient had extremely elevated serum ferritin levels (≥2000 ng/mL), and this finding helped us to exclude other infectious and autoimmune diseases and malignancies. Moreover, a good response to steroid treatment was the crucial result that substantiated the diagnosis of AOSD.

Conclusion

Adult-onset Still's disease, which is characterized by nonspecific clinical findings, such as high fever, arthritis, and rash, should be included in our differential diagnosis of FUO. In addition, if patients have chest pain and ECG findings, the cardiopulmonary findings must be carefully investigated, and after the exclusion or evaluation of ARF and pneumonia, AOSD should never be ruled out and should be kept in mind in the differential diagnosis.

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