

A young man with oligoarthritis preceded by urethritis and diarrhea

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ABSTRACT

Reactive arthritis is a form of seronegative spondyloarthritis temporally triggered by an apparent infection, usually gastroenteritis or urethritis. This arthritis typically starts within a few weeks of the inciting infection. It commonly affects young adults and is strongly associated with the MHC class I antigen HLA-B27. Here we present an interesting case of young man with HLA-B27 positive reactive arthritis in whom the presumptive diagnosis was reached early in the course of his illness.

Key words: Reactive arthritis, oligoarthritis, chlamydial urinary tract infection, HLA-B27 positive arthritis

INTRODUCTION

Reactive arthritis is an autoimmune disease which usually develops soon after or during a presumptive gastrointestinal or urogenital infection.¹ Typically reactive arthritis presents with asymmetric oligoarthritis that mainly involves lower limbs.² Here we present an interesting case of young man who presented with reactive arthritis after gastro-urogenital symptoms.

CASE PRESENTATION

A 20-year-old man with Gilbert's syndrome was admitted with left groin pain for one week. He had an episode of loose watery diarrhea associated with abdominal pain two weeks previously. His diarrhea resolved in three days. Subsequently he noticed dysuria with blood in the urine but no fever or chills.

He was treated with oral ciprofloxacin. Subsequently he was switched to nitrofurantoin and cephalexin without any improvement. Two days thereafter he noted redness in both eyes and the new onset of pain in the left groin. By the time of his arrival to our facility his ocular redness had resolved. His roommate had also experienced a self-limited diarrheal illness.

Physical examination revealed temperature 98°F, heart rate 110 beats/minute, respiratory rate 16 breaths/minute, and blood pressure 110/67 mmHg. Examination of his left hip joint demonstrated tenderness over the groin and a restricted range of motion. The remainder of the musculoskeletal and systemic examination was unremarkable with the exception of a small amount of purulent discharge from the urethra.

The patient underwent a left hip joint arthrocentesis on the day of admission. On hospital day three his left hip pain was slightly improved, but he developed pain and swelling in the left ankle joint. On

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hospital day four pain and swelling of left wrist joint developed. Laboratory work revealed hemoglobin 14.2 gm/dl, white blood cell count 8,200/mm³, platelet count 325,000/mm³, and C-reactive protein (CRP) 4.7 mg/dl (normal : <1.0mg/dl); electrolytes, liver, and renal function tests were normal. Left hip joint synovial fluid showed white blood cell count of 18,500/mm³ with 79% neutrophils. Tests for infection, including hepatitis A, B and C screening tests, monospot test, rapid group A streptococcus pharyngeal smear, human immune deficiency virus (HIV) screening, blood and synovial fluid Gram stain, bacterial culture, fungal culture, urine culture, polymerase chain reaction (PCR) for *Chlamydia trachomatis* and *Neisseria gonorrhoeae*, and *Campylobacter jejuni* antibody IgG, were negative. Stool specimens for *Salmonella* spp, *Shigella* spp, *Campylobacter* spp, *Clostridium difficile* PCR, and *Giardia lamblia* antigen were also negative. Immunologic work up, including rheumatoid factor, anti-cyclic citrullinated peptide immunoglobulin G (IgG), double stranded deoxyribonucleic acid (dsDNA), anti-nuclear antibodies (ANA) IgG by ELISA, and DNase B antibody, were normal. HLA-B27 antigen was positive. Magnetic resonance imaging showed arthritis of the left wrist joint and some evidence of left Achilles tendinitis.

The patient was initially started on empiric intravenous vancomycin and ceftriaxone until his blood cultures, left hip synovial fluid Gram stain, and urethral cultures were reported negative. Oral prednisone 20 mg daily was added along with naproxen 500 mg twice a day. His joint symptoms improved. He was discharged on a tapering dose of prednisone, naproxen, and a short course of empiric oral doxycycline plus rifampin. At an outpatient visit four weeks after discharge he had again developed pain in the left wrist and ankle. Low dose prednisone along with weekly methotrexate 15 mg and daily folic acid 1 mg was started. His symptoms are well controlled till now at nine weeks post diagnosis.

DISCUSSION

Reactive arthritis is a form of seronegative spondyloarthritis triggered by infection, usually gastroenteritis or urethritis. However, blood and synovial culture workup often remains negative.¹ Nevertheless certain microorganisms, most commonly *Chlamydia trachomatis*, *Yersinia* spp, *Salmonella* spp, *Shigella* spp, *Campylobacter* spp, and *Escherichia coli*, have been strongly associated with reactive arthritis.² Reactive arthritis commonly affects persons between 15 to 35 years of age.³

The clinical presentation of reactive arthritis typically occurs one to four weeks after an inciting infection.⁴ The patient usually presents with asymmetrical oligoarthritis involving the lower limbs, but the upper limbs joints can be involved as seen in our patient. Arthritis can also be associated with enthesitis, inflammation at the insertion site of ligaments or tendons. Extra-articular manifestations include conjunctivitis, erythema nodosum, keratoderma blenorrhagica, circinate balanitis, and mucosal ulcers.⁵ Overall 10% of patients with reactive arthritis develop cardiac manifestations, and these are more common in patients with chronic disease.⁶ Pericarditis, aortic valve insufficiency, conduction block, and rarely cardiogenic shock have been reported cardiac manifestations in the literature.^{7,8,9} The average duration of acute reactive arthritis is three to five months. Arthritis for more than six months is considered a sign of chronicity.^{4,10}

The diagnosis of reactive arthritis is made by the presence of asymmetric oligoarthritis preceded by symptoms of gastrointestinal or urogenital infection in the absence of other causes of arthritis. There are no definite diagnostic laboratory tests or radiographic findings in reactive arthritis. Erythrocyte sedimentation rate (ESR) is markedly elevated in most cases, and values above 60 mm/ 1st hour are commonly seen. Complement C3 and C4 levels and CRP are elevated, especially at the onset of the disease.³ There may be mild leukocytosis and anemia in the early phase of the disease. HLA-B 27 antigen is positive in most cases, and rheumatoid factor is consistently

negative.¹¹

In general, antibiotics are not indicated for uncomplicated enteric infections or for treatment of the reactive arthritis itself. Antibiotic therapy should be used for treatment of active urinary tract infection with *Chlamydia trachomatis*.¹² Non-steroidal anti-inflammatory drugs (NSAIDs) are the first line and the cornerstone treatment, especially if used in full dose in the early phases of reactive arthritis.^{2,11} Systemic or intra-articular glucocorticoids are generally used if the patient is not responding well to NSAIDs. Disease-modifying anti-rheumatic drugs (DMARDs) are reserved for patients who are not responding to NSAIDs and require high doses of corticosteroids. Sulfasalazine and methotrexate are the most commonly used medications in this group. TNF inhibitors are used for patients resistant to corticosteroids and DMARDs.¹³

The prognosis of reactive arthritis depends on causative organism, the presence or absence of HLA-B27, gender, and the presence of recurrent arthritis.¹⁴ HLA-B27 antigen has been associated with reactive arthritis in about 70-80% patients and predicts more severe disease.^{2,11} Leirisalo-Repo *et al* reported a retrospective study of 63 patients with a mean follow-up of 11 years. HLA-B 27 antigen was positive in 88% of the patients. He found that 16% of the patients developed a chronic course and they were all HLA-B 27 positive.¹⁵ Our patient presented with classic symptoms of reactive arthritis with positive HLA-B27 antigen and elevated CRP. All other laboratory investigations were normal. He failed to respond to NSAIDs and steroids, so methotrexate was added. The patient's symptoms are now controlled, and he continues follow with a rheumatologist.

In summary, reactive arthritis is a common autoimmune disease that should be suspected in young patients presenting with asymmetric oligoarthritis preceded by gastrointestinal or urogenital infection. The diagnosis of reactive arthritis is made by the exclusion of other known causes of arthritis, especially septic arthritis and supported by the presence of extra-articular manifestations, including conjunctivitis, urethritis, and tendonitis as seen in our case.

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