

Uncommon Cause of Reactive Arthritis in the Elderly

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Abstract Reactive Arthritis, formerly known as Reiter's syndrome, is a delayed autoimmune mediated inflammatory reaction in the joints that occurs from a response to an infection elsewhere in the body. It usually occurs in young males in response to a genitourinary or gastrointestinal infection. These males may have a predisposition to reactive arthritis by being Human Leukocyte Antigen-B27 (HLA-B27) positive. This report will display an unusual case of reactive arthritis in an elderly female.

Keywords: reactive arthritis, reiter's syndrome, Clostridium Difficile, HLA-B27, Arthritis, elderly, staph aureus, MRSA

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1. Introduction

Reactive arthritis is an immune-mediated delayed inflammatory process that occurs in a joint in response to infection elsewhere in the body. This inflammation leads to pain, erythema, and swelling around the joint. Reactive arthritis has a prevalence of 0.1% of the general population and incidence of 10 cases/100,000, and is most commonly seen in adult males in the second and third decades of their life [1]. Reactive arthritis is commonly caused by chlamydia, salmonella, yersinia, and campylobacter infection [2]. We present a case of a 68-year old HLA-B27 (Human Leukocyte Antigen - B27) positive female presenting with reactive arthritis.

2. Case Presentation

A 68-year-old female with history of osteoporosis, plaque psoriasis, and osteoarthritis presented with worsening left foot pain, erythema, and swelling that developed 1 week ago (Image A). The patient was being treated with antibiotics for Methicillin-resistant Staphylococcus aureus vulvar abscess two months prior, and developed clostridium difficile (C. Diff) infection from ciprofloxacin use at that time. The C. Diff infection was treated with antibiotics at that time and resolved, and the patient had no joint pain. The patient then developed pain in the left foot and inability to ambulate starting in the last 7 days. On exam, patient had left foot warmth, erythema, and tenderness. Labs were significant for leukocytosis 10 K/uL, erythrocyte sedimentation rate of 71 mm/Hr, C-reactive protein of 2.4 mg/dL, and

HLA-B27 positive. She was negative for Antinuclear Antibody (ANA), Anti-cyclic Citrullinated peptide antibodies (Anti-CCP), and Rheumatoid Factor (RF). The patient did not have diarrhea and so her stool was not checked for infection. X-ray of the foot did not reveal significant findings and she was diagnosed with cellulitis (Image C). The foot pain and swelling never resolved despite antibiotic use. Magnetic resonance imaging (MRI) of the left foot showed inflammation of the 2nd-4th metatarsophalangeal joints, suspicious for inflammatory arthropathy (Image D). A few days into her hospital course, she developed pain and erythema in her right third metacarpophalangeal joint (Image B). She was presumed to have reactive arthritis since she had resolution of symptoms with naproxen use.



Image A. Erythema of the left foot



Image B. Erythema of the right hand



Image C. X-ray L foot normal

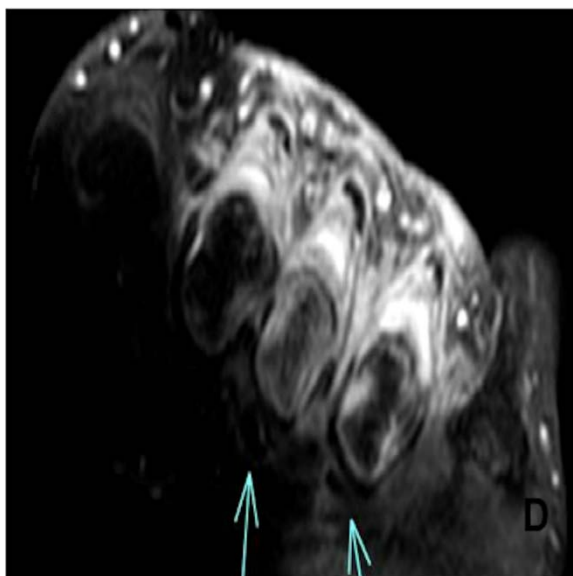


Image D. MRI L foot showing inflammation of 2nd-4th MTP joints

3. Discussion

Diagnosing reactive arthritis is based on the history and physical exam since there is no definitive diagnostic or serologic test to confirm the diagnosis. Patient's that are HLA-B27 positive have a 50% greater chance of developing reactive arthritis, and are linked to more severe joint abnormalities and recurrence of reactive arthritis [3,4]. It is believed that the HLA-B27 gene amplifies molecular mimicry during infection, and leads to higher levels of inflammation in the joints in the following weeks [5]. Reactive arthritis symptoms usually present 2-4 weeks following a bacterial infection [6]. This patient had a prior *Clostridium difficile* infection 2 months prior with resolution of symptoms with treatment at that time. The occurrence of *C. diff* as a cause of reactive arthritis is rare compared to the typical gastrointestinal causes such as salmonella, yersinia, and campylobacter, as only 50 cases of *C. diff* have been reported since 1976 [2,7]. This patient was also being treated for a methicillin-resistant staphylococcus aureus vulvar abscess 2 months prior. There have been a few reported cases of staphylococcus aureus causing reactive arthritis, usually either from bacteremia or toxic shock syndrome [8]. Since this patient did have vulvovaginitis, which is a genitourinary infection, then the MRSA vulvar abscess could have also been a trigger to the reactive arthritis as well. Regardless of cause, the treatment for reactive arthritis is supportive care by using non-steroidal anti-inflammatories (NSAIDs) to help with inflammation and pain. Despite treatment, reactive arthritis can re-occur in 25-50% of cases, more so in HLA-B27 positive patients [9].

4. Conclusion

The patient in this case presented with symptoms and physical exam findings consistent with reactive arthritis. Both *C. diff* and staph aureus infections have been rarely linked to cases of reactive arthritis. Since the *C. diff* and staph aureus infections occurred around the same time, it is difficult to say which was the definitive trigger to the reactive arthritis. It is important for providers to recognize that atypical genitourinary and gastrointestinal infections, such as staph aureus and *C. diff*, can lead to reactive arthritis despite being rare. This case report aims to raise awareness that reactive arthritis can occur in elderly females and should be included in the differential diagnosis.

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