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REACTIVE ARTHRITIS

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ABSTRACT

Reactive arthritis is a form of seronegative spondylarthritis that presents following an infection, with clear associations to specific microorganisms. It is a rare entity and typically affects young adults.

An 88-year-old woman, admitted in our ward with pseudomembranous enterocolitis and acute renal lesion, presented with axial oligoarthritis on the 11th day after onset of symptoms. It was accompanied by elevation of inflammatory parameters – positive HLA-B27 and seronegative to rheumatoid factor, and anti-cyclic citrullinated peptide.

The patient improved following treatment with non-steroidal anti-inflammatory drugs and inflammatory parameters normalised, with no recurrence after one year on follow-up.

This case illustrates a rare entity in the elderly, with an established association in more recent years with *Clostridioides difficile*.

KEYWORDS

Reactive arthritis, *Clostridioides difficile*, pseudomembranous enterocolitis, spondyloarthritis, HLA-B27

LEARNING POINTS

- Post-infectious disease syndromes are poorly understood, and their management relies on their distinct pathophysiologies.
- Reactive arthritis can occur days or weeks after a gastrointestinal or urogenital bacterial infection and can present as Reiter's syndrome. The diagnosis is clinical, and its treatment should consider prevention, effective treatment of the causative agent and should target inflammation.
- We present a case of reactive arthritis that was diagnosed in an elderly patient (less common) with a trigger bacterium that has been implicated more and more consistently in recent years.

INTRODUCTION

Reactive arthritis is a form of seronegative spondylarthritis that presents following an extra-articular infection, mostly gastrointestinal or urogenital[1-5].

There is a clear association between reactive arthritis and some specific microorganisms[1-5], and *Clostridioides difficile* is an uncommon cause of sterile[3,4], inflammatory and asymmetric oligoarthritis[3]. If a triad of arthritis, conjunctivitis and urethritis is present, it is referred to as Reiter's syndrome[1-3,5]. Originally, Birnbaum et al., cited in

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Zeidler and Hudson[4], published the diagnostic criteria for reactive arthritis associated with *C. difficile*: 1) evidence of aseptic synovitis (confirmed by culture) developing during or immediately after colitis; 2) presence of toxins produced by Clostridium difficile in stool samples; 3) absence of other causes of colitis and arthritis. Reactive arthritis has a strong association with the human leukocyte antigen B27 (HLA-B27)[1-5] and this is related to a worse prognosis[5] and chronic reactive arthritis[1,5]. It is a rare entity[1,5] that typically affects young adults[1-3,5] and its treatment is symptomatic[1-3,5].

This article aims to highlight a less common form of reactive arthritis based on a clinical case.

CASE DESCRIPTION

An 88-year-old Caucasian woman was hospitalised two weeks prior due to decompensated heart failure and a urinary tract infection, with isolation of *Klebsiella pneumoniae*. Relevant personal history included hypertension, dyslipidaemia, anaemia and chronic kidney disease. The patient was readmitted with complaints of diarrhoea 6-10 episodes a day, without blood but sometimes with mucus, and with dysuria and urinary urgency.

On examination the patient was alert, normotensive, tachycardic (heart rate 115 bpm) and afebrile; cardiopulmonary auscultation was without alterations and there was slight diffuse discomfort on abdominal palpation. The blood tests in the emergency room (ER) showed elevated inflammatory parameters and acute kidney injury (urea 51 mg/dl and creatinine 1.56 mg/dl). A pelvic ultrasound scan was carried out in the ER with no relevant alterations. She was admitted to the medical ward for stabilisation and further investigation.

Fluid therapy was started with gradual improvement of the kidney injury. The hypokalaemia, hypomagnesaemia and hypophosphatemia needed to be supplemented, and the deficits were solved by the time of discharge. In the stool sample, *C. difficile* toxin A and B were positive and antibiotic therapy with oral vancomycin was started, with rapid improvement of the diarrhoea in two days. On the 5th day of hospitalisation (11th day after the onset of diarrhoea) the patient started with articular pain, in both knees and right shoulder, accompanied by inflammatory signs but without other distinctive characteristics, followed by a rise of inflammatory parameters (leukocytosis 20 $\times 10^9$/l, and neutrophils; C-reactive protein 30 mg/dl). The anti-citrulline peptide antibodies and the rheumatoid factor were negative, such as anti-dsDNA, anti-smooth muscle antibodies, anti-mitochondrial, anti-nuclear and anti-cytoplasmic antibodies. The most likely diagnostic hypothesis was reactive arthritis, so anti-inflammatory therapy was started, with significant improvement.

The patient was discharged on the 14th day of hospitalisation after taking 12 days of oral vancomycin without complications, and with total resolution of the diarrhoea. After the initiation of anti-inflammatory therapy there was significant improvement of the articular pain and inflammatory signs, with significant decrease of inflammatory parameters. The patient was referred to Internal Medicine for reassessment and follow-up. After one year of follow-up there were no other arthritis complaints.

DISCUSSION

Reactive arthritis is a rare[1,5] and self-limited form[1] of seronegative spondylarthritis typically affecting young adults, and arises following an infection, mostly gastrointestinal or urogenital[1-5]. There is a clear association between reactive arthritis and some specific microorganisms such as *Chlamydia trachomatis*, *Shigella*, *Yersinia*, *Salmonella* and *Campylobacter*[1-5]. The diagnosis of reactive arthritis is clinical and based on the patterns of findings and exclusion of other diseases[3-5]. There is no specific diagnostic test[1,2,4,5], but there are diagnostic criteria for *C. difficile* – induced reactive arthritis, proposed by Birnbaum et al. (cited in Zeidler and Hudson)[4], which were all present in our case. Many of the preceding and causative infections could be asymptomatic and only detectable by laboratory testing[1,5]. The microorganism cannot be cultured from the affected joints[1,3-5], but an inability to isolated it does not exclude this diagnosis[3,4]. In this case, the patient had an infection from *C. difficile*, with toxin A and B positive in a stool sample.

Reactive arthritis is typically characterised by a mono or oligoarticular pattern[1-3,5] which is asymmetric, involving mostly the lower extremities[1-3,5] (mainly the knee) [2,5], and there is a range of several days to several weeks between the primary infection and the appearance of arthritis[1,2,5]. In this reported case the articular signs appeared 11 days after the *C. difficile* infection, which was the causative infection, and affected mainly both knees and a shoulder. Reactive arthritis seems to have a direct relationship with the HLA-B27, there is some evidence to suggest that it is more likely to occur in patients with HLA-B27[1-5] and in these, the reactive arthritis is more chronic[1,5].

The treatment is based on treating the causative infection, probably with antibiotic therapy[1,5] and for the arthritis the main treatment is anti-inflammatory drugs[1-3,5]. This patient had to receive antibiotic therapy for her main infection and non-steroidal anti-inflammatory drugs, which are the first line of treatment, for the reactive arthritis. The patient had a follow-up after a year in an internal medicine clinic without similar episodes and remains asymptomatic.

CONCLUSION

We presented a case of reactive arthritis by *C. difficile* in an elderly patient with a recent antibiotic cycle and arthralgias. There are specific diagnostic criteria for reactive arthritis by *C. difficile*. This case highlights the importance to be alert to a rare pathology in the elderly population who have frequently arthralgias for different causes.

REFERENCES

1. Selmi C, Gershwin ME. Diagnosis and classification of reactive arthritis. *Autoimmun Rev* 2014;**13**:546–549.
2. Wu IB, Schwartz RA. Reiter's syndrome: the classic triad and more. *J Am Acad Dermatol* 2008;**59**:113–121.
3. Essenmacher AC, Khurram N, Bismack GT. A case of reactive arthritis due to Clostridium difficile colitis. *J Community Hosp Intern Medi Perspect* 2016;**6**:30151.
4. Zeidler H, Hudson AP. Reactive arthritis update: spotlight on new and rare infectious agents implicated as pathogens. *Curr Rheumatol Rep* 2021;**23**:53.
5. van Tubergen A. Reactive arthritis. UpToDate. [Last update 2024 Aug 23]. Available from: https://www.uptodate.com/contents/reactive-arthritis