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REACTIVE ARTHRITIS: A CASE REPORT AT THE MOHAMMED V MILITARY  
TRAINING HOSPITAL IN RABAT

--Manuscript Draft--

CONFIDENTIAL

## REACTIVE ARTHRITIS: A CASE REPORT AT THE MOHAMMED V MILITARY TRAINING HOSPITAL IN RABAT

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### Abstract

Reactive arthritis (RA) is a type of joint inflammation that usually occurs after a genitourinary or digestive infection, without the presence of germs in the joint itself. It often presents as asymmetric arthritis, joint pain, swelling, deformities in fingers or toes, and various skin or mucosal symptoms. The diagnosis is primarily based on clinical signs and is often associated with spondyloarthropathies, with severe forms frequently linked to the presence of the HLA-B27 gene.

We present the case of a 23-year-old patient admitted to the Mohammed V Military Training Hospital in Rabat for bilateral knee pain, lumbosciatica, dactylitis, urethral discharge, and bloody mucus diarrhea. Radiographic and MRI examinations were atypical for RA, showing neither focal bone lesions nor intra-articular effusion. Biological tests revealed leukocytosis, an elevated sedimentation rate, and high CRP levels, while the joint fluid remained sterile. Tests detected an infection with *Ureaplasma urealyticum* and *Chlamydia trachomatis* through PCR, along with a co-infection with hepatitis C. HLA-B27 genotyping and the presence of antinuclear antibodies were also noted.

**Key words:** Sterile arthritis; Spondylitis; HLA B27; Antibiotic therapy

### Data Summary

No data was generated during this research or is required for the work to be reproduced

### Introduction:

Reactive arthritis (RA) is a type of joint inflammation that usually occurs after a genitourinary or digestive infection, without the presence of germs in the joint. It often manifests as asymmetric arthritis, primarily affecting the lower limbs with symptoms such as pain, intra-articular effusion, deformities of fingers or toes, and various skin or mucosal symptoms. Diagnosis is based on clinical symptoms, particularly in the presence of a spondyloarthropathy with urethritis, conjunctivitis, and skin lesions, previously known as Reiter's syndrome. Symptoms can range from mild to severe, with pain primarily in the joints of the lower limbs and sometimes in the lower back. The presence of the HLA-B27 gene is often associated with more severe forms.

Certain bacteria are clearly associated with reactive arthritis, such as enteric bacteria (*Salmonella spp.*, *Shigella spp.*, *Yersinia spp.*, *Campylobacter spp.*) or bacteria causing urogenital infections (*Chlamydia trachomatis*, *Mycoplasma genitalium*, *Ureaplasma urealyticum*) [1]. We illustrate our work with a case reported at the Mohammed V Military Training Hospital in Rabat.

### Case Presentation

A 23-year-old patient presented to the rheumatology department of the Mohammed V Military Training Hospital in Rabat with bilateral knee pain, which is common in reactive arthritis. The simultaneous presence of lumbosciatica is less typical and may complicate the diagnosis. The sausage-shaped inflammation of the toes is a more specific symptom, often associated with severe or atypical forms of reactive arthritis. The presence of urethral discharge and episodes of bloody mucus diarrhea

43 strengthens the link to a pre-existing infection, although bloody mucus diarrhea is not always observed  
44 in all cases of reactive arthritis.

45 X-rays(**Figure 1**) and MRI(**Figure 2**) showed no focal bone lesions or intra-articular effusion, which  
46 is atypical since reactive arthritis can sometimes present subtle radiographic signs. The patient  
47 underwent a series of biological tests that revealed leukocytosis at 10,700/mm<sup>3</sup> with a neutrophil  
48 count of 7,800/mm<sup>3</sup>, a significant inflammatory syndrome with an accelerated sedimentation rate at  
49 25 mm, and CRP at 11.7 mg/L. The joint fluid remained sterile, and the urinalysis (ECBU) showed  
50 aseptic leukocyturia. Blood cultures taken due to fever returned sterile, but a urethral swab performed  
51 in the bacteriology laboratory revealed numerous *Ureaplasma urealyticum* and the detection of a strain  
52 of *Chlamydia trachomatis* by PCR.

53 Testing for sexually transmitted infections (STIs) revealed co-infection with hepatitis C, while  
54 serologies for HIV, HBV, and syphilis were negative. Rheumatologic assessment was negative, HLA-  
55 B27 genotyping was positive, and autoimmunity testing showed the presence of antinuclear  
56 antibodies. Initial tests did not show clear signs of bacterial infection in the joint fluid, making it  
57 difficult to distinguish from septic arthritis. The presence of lower back pain and a positive HLA-B27  
58 genotype might suggest ankylosing spondylitis, but clinical symptoms and radiological findings do not  
59 support this diagnosis.

60 Leukocytosis and an inflammatory syndrome are not specific, complicating diagnostic confirmation.  
61 The absence of bacteria in the ECBU but the presence of urinary symptoms raises the dilemma of an  
62 underlying infection or an inflammatory process. Tests revealed an infection by *Ureaplasma* and  
63 *Chlamydia*, but clinical symptoms and the biological profile must be carefully correlated to confirm  
64 their role in the joint pathology. The diagnosis of spondyloarthritis secondary to an STI was made. **The**  
65 **patient was treated with doxycycline 200 mg, 1 tablet per day for 21 days, and pain management. After**  
66 **21 days of antibiotic therapy, the outcome was very favorable, with the absence of pain and biological**  
67 **inflammatory syndrome.**

68



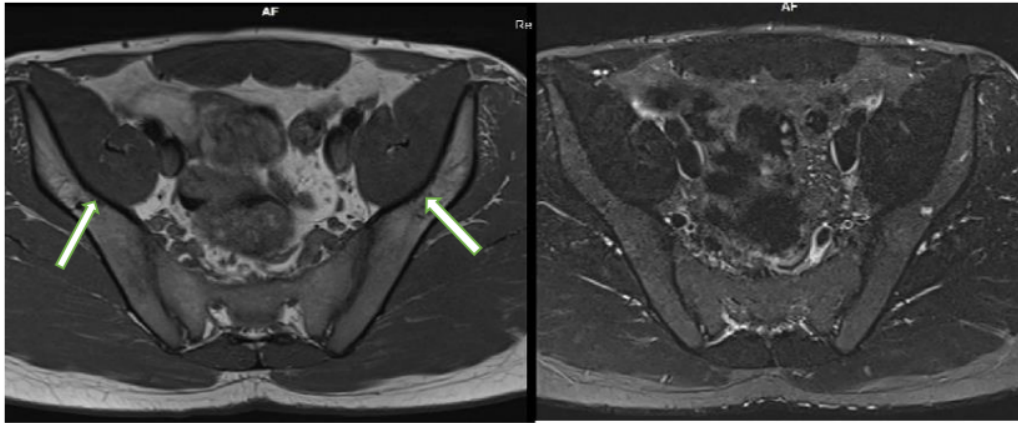
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**Figure 1 :** Normal De Séze Radiographic View

71

absence of signs of inflammation or bone erosion



**Figure 2:** MRI of the Pelvis Showing No Signs of Sacroiliitis

- Preservation of the joint spaces of both sacroiliac joints
- No subchondral cysts, sacral or iliac bone edema, or focal bone lesions observed

**Discussion:**

Reactive arthritis is ubiquitous and affects both men and women. While the overall incidence in the population is only 10 to 40 per thousand, it develops in 1 to 4% of patients with a mucosal infection. This figure rises to 25% in HLA-B27 carriers. Conversely, 50 to 80% of patients developing reactive arthritis are HLA-B27 positive.

As with other forms of spondyloarthropathy, there is a strong association between the major histocompatibility complex class I antigen, HLA-B27, and the occurrence of RA. While the prevalence of the B27 allele is 7.5% in the general Caucasian population, its frequency in patients varies from 60% in cases of RA following *Chlamydia* infection to 70-80% in forms following digestive infection [2].

RA is linked to exposure to an infectious agent compatible with this diagnosis. Only proof of bacterial infection truly allows for a confirmed diagnosis of RA [3], which occurs after a bacterial digestive or urethral infection. It is characterized by inflammatory rheumatic involvement of the large joints of the lower limbs, extra-articular involvement (diarrhea, urethritis, psoriatic skin, mucosal, and nail lesions), and a general clinical and biological inflammatory syndrome [4].

Our case presents with bilateral knee pain, lumbosciatica, dactylitis, urethral discharge, and bloody mucus diarrhea. Although knee pain and dactylitis are classic manifestations of reactive arthritis, lumbosciatica and bloody mucus diarrhea are less typical. Lumbosciatica, in particular, is less frequently associated with reactive arthritis and can complicate the diagnosis by mimicking conditions such as ankylosing spondylitis (AS) [5]. The absence of focal bone lesions or intra-articular effusion on X-ray and MRI is atypical. Reactive arthritis can sometimes show subtle radiographic signs such as erosions or inflammatory changes in peripheral joints [6]. However, normal X-rays are not uncommon, especially in the early stages of the disease or in less severe forms [7].

Leukocytosis and elevated inflammatory markers (sedimentation rate and CRP) are consistent with inflammation but are not specific to any particular etiology [8]. The absence of germs in the joint fluid and sterile blood cultures complicates the distinction between septic and reactive arthritis [9]. The detection of *Ureaplasma urealyticum* and *Chlamydia trachomatis* by PCR, combined with the presence of a positive HLA-B27 genotype, supports the diagnosis of reactive arthritis secondary to a

104 sexually transmitted infection (STI) [10]. These pathogens are well-known for being associated with  
105 reactive arthritis, but their detection in specific samples must be interpreted with caution, especially in  
106 the absence of direct clinical signs of these infections [11]. The primary diagnostic challenge is  
107 differentiating between septic and reactive arthritis. Septic arthritis is often characterized by the  
108 presence of germs in the joint fluid, but as in this case, the absence of these germs does not always  
109 allow for a clear distinction [12]. Reactive arthritis should be considered, especially with a history of  
110 recent infections. The presence of lower back pain and a positive HLA-B27 genotype might suggest  
111 ankylosing spondylitis, but the concordance of clinical symptoms and radiological findings with the  
112 diagnostic criteria for AS is crucial [13]. In this case, MRI and other tests do not support this  
113 diagnosis, which further suggests reactive arthritis [14]. Doxycycline is an appropriate treatment  
114 choice for infections caused by *Ureaplasma* and *Chlamydia*, but the effectiveness of the treatment also  
115 depends on the sensitivity of the strains and potential resistances [15]. Regular follow-up is essential to  
116 ensure treatment efficacy and adjust as necessary. Post-treatment follow-up is crucial to detect  
117 recurrences or complications. The favorable response to treatment observed in this patient underscores  
118 the importance of targeted management of underlying infections and inflammatory symptoms [16].  
119 Rigorous follow-up confirms the complete resolution of symptoms and allows for treatment  
120 adjustments based on clinical and biological evolution [17].

## 121 **Conclusion:**

122 Reactive arthritis (RA) is a sterile arthritis occurring immediately after a triggering bacterial infection  
123 affecting the intestinal or urethral mucosa, occurring at a distance from the joint, with traditional  
124 bacterial cultures of joint samples remaining sterile. Management requires a multidimensional  
125 diagnostic approach and appropriate management for reactive arthritis complicated by atypical clinical  
126 presentations and multiple infections.

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## 130 **Author contributions**

131 H.L contributed to the initial drafting of the manuscript, while N.Z, EL. B and Y.B revised it. M.C.  
132 provided final approval for the version to be published.

## 133 **Conflicts of interest:**

134 The authors declare that there are no conflicts of interest.

## 135 **Consent to publish**

136 Written informed consent was obtained from the patient to publish this report in accordance with the  
137 journal's patient consent policy.

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