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A case of human leukocyte antigen B27 positive reactive arthritis associated with severe acute respiratory syndrome coronavirus 2 infection

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To the Editor,

Reactive arthritis (ReA) is a form of seronegative spondyloarthritis associated with human leukocyte antigen B27 (HLA-B27) positivity that causes asymmetric, oligoarticular arthritis 1–6 weeks after an infection with a causative pathogen [1]. Associations with both bacterial and viral infections have been reported. Herein, we describe a case of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection-related ReA.

A 37-year-old male patient presented to our clinic with severe swelling and pain in both wrists, knees, and ankles for approximately 3 weeks and hospitalized for diagnostic evaluation and treatment. Patient history was unremarkable for any rheumatic disease or other medical conditions except for having watery diarrhea for a week and a dry cough for 2 days before the onset of arthritis. Physical examination revealed arthritis in bilateral knees, wrists, ankles, elbows, and metatarsophalangeal joints. In laboratory evaluation, blood count, liver and kidney function tests, urinalysis, coagulation parameters, ferritin, uric acid, and procalcitonin levels were found to be normal. Erythrocyte sedimentation rate and C-reactive protein (CRP) levels were elevated (63 mm/h, 117 mg/L, respectively). Arthrocentesis of the right knee revealed 617 leukocytes/mm^3, with negative gram staining and bacterial cultures. Tests for antinuclear antibodies, rheumatoid factor, anti-streptolysin O antibodies, anti-cyclic citrullinated peptide antibodies, anti-extractable nuclear antibodies, and antineutrophil cytoplasmic antibodies were all negative as well as serological and agglutination tests for infectious agents consisting hepatitis B and C, human immunodeficiency virus, Epstein–Barr virus, herpes simplex type 1 and 2, parvovirus B19, rubella, cytomegalovirus, toxoplasma, brucellosis, syphilis, and gonorrhea. Direct radiography of ankles, knees, pelvis, and feet showed no erosive changes or enthesophytes. Ultrasonographic evaluation of both knees revealed synovial effusion and synovial hypertrophy bilaterally. Chest computed tomography was found to be normal. No vegetation was observed in echocardiography. There was no growth in blood, stool, and urine cultures. No parasites were observed in the stool microscopy. Combined nasopharyngeal and throat swab sampling for real-time reverse transcription-polymerase chain reaction (PCR) confirmed that the patient was positive for SARS-CoV-2. A diagnosis of ReA secondary SARS-CoV-2 was then considered. Hydroxychloroquine 2 mg × 200 mg and methylprednisolone 16 mg daily were initiated as treatment. After 3 days, arthritis regressed, CRP levels dropped to normal limits, and the patient was discharged with methylprednisolone 8 mg after two consecutive negative COVID-19 PCR tests. In the 1st-

month follow-up, the blood sample which was sent for HLA-B27 testing during hospitalization was found to be positive. Although arthritis did not recur, the patient still had complaints of joint pain despite methylprednisolone treatment. Therefore, sulfasalazine 2 g daily was added to the treatment and methylprednisolone set to be tapered gradually.

ReA is typically triggered after a gastrointestinal or genitourinary infection. Several viral pathogens such as rubella, parvovirus B19, and Chikungunya were also known to cause post-infectious arthritis [2]. ReA associated with SARS-CoV-2 infection has been reported previously [3], and in the case we presented, HLA-B27 was found to be positive. HLA-B27 positive ReA patients were reported to be more prone to developing chronic arthritis with a more severe disease course [4]. As such positive HLA-B27 may be the underlying cause of prolonged articular symptoms in our case. SARS-CoV-2 is reported to cause various extrapulmonary complications, including cardiovascular, neurologic, and dermatologic manifestations. Different rheumatologic manifestations are also reported to be observed during disease course, ranging from arthritis resembling a viral post-infectious or ReA to more severe conditions like multisystem inflammatory syndrome [3, 5, 6]. Therefore, during this worldwide pandemic, a SARS-CoV-2 infection should not be overlooked in the differential diagnosis of patients with symptoms resembling ReA.

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