Reumatol Clin. 18 (2022) 490–492

Sociedad Española de Reumatología - Colegio Mexicano de Reumatología

Reumatología Clínica

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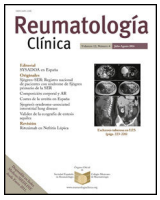

Case Report

Reactive arthritis with SARS-COV-2 as a trigger☆

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ARTICLE INFO

Article history:
Received 5 August 2021
Accepted 4 November 2021
Available online 11 May 2022

Keywords:
Reactive viral arthritis
SARS-CoV-2

ABSTRACT

We present the case of a 19-year-old male patient who developed symmetrical distal polyarthritis which was diagnosed as a reactive atypical arthritis caused by SARS-COV-2 infection after dismissing other causes of arthritis.

Artritis reactiva con SARS-CoV-2 como desencadenante

Palabras clave:
Artritis reactiva viral
SARS-CoV-2

RESUMEN

Se presenta el caso de un paciente varón de 19 años que desarrolla una poliartritis simétrica distal que se diagnosticó como artritis reactiva atípica por infección por SARS-COV-2 tras descartar otras causas de artritis.

Introduction

Viral infections have the capacity to cause arthritis and arthralgia, usually of the poliarticular type and in an acute form, concurrent with the infection by the corresponding microorganism. However, on many occasions there is a time delay between the joint manifestations and the other clinical phenomena usually associated with these infections.[1] In this study, we suggest SARS-CoV-2 as a causative agent of reactive viral arthritis and present the case of a patient with distal symmetric polyarthritis as a late manifestation of COVID-19 disease.

Clinical observation

The patient, a 19-year-old male from Morocco, who had a personal history of alopecia areata and pityriasis versicolor, came to the emergency department on 13 December 2020 reporting additive polyarthralgias, which had started in the left knee two months earlier and were later added to the right knee, ankles and wrists. They were of an inflammatory nature with functional impotence and a feeling of stiffness that improved with mobilisation, but persisted throughout the day. The pain interrupted sleep. In addition, he reported a weight loss of about 10 kg, with initial hyporexia, which had resolved at the time of the first consultation. Fever of up to 38 C, predominantly in the evening, which lasted 15 days at the onset. He presented with a rash on his back, already assessed by the Dermatology Department of the Hospital Universitario Virgen de las Nieves (HUVN) (compatible with pityriasis rosea Gibert), which appeared after symptoms compatible with COVID-19 (nausea, vomiting, arthromyalgia and headache, without associated respiratory symptoms). Maxillary pain on chewing and difficulty opening the jaw.

☆ Please cite this article as: Ruiz-del-Valle V, Sarabia de Ardanaz L, Navidad-Fuentes M, Martín-Martín I, Lobato-Cano R, Artritis reactiva con SARS-CoV-2 como desencadenante, Reumatología Clínica. 2022;18:490–492.

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In the rest of the anamnesis by systems and apparatus: dry cough predominantly at night, no haemoptysis. No chest or abdominal pain. No diarrhoeal stools. No dysphagia. No dysuria. No oral or genital aphthae, no signs of uveitis, no difficulty with mobility of the shoulder girdle or pelvis, nor with flexion of the dorsal spine.

Epidemiologically: Denied foreign travel. No consumption of toxic substances. No risky sexual relations. He has had a cat since February 2021. He is originally from a rural area where there are caprino cattle, but his family does not own or consume unprocessed dairy products.

On examination, the vitals were stable, with BP 115/73 mmHg, HR 94 bpm, temperature 37.1 C, SaO2 96% with FiO2 of 21%. Diuresis not quantified in the ED, but maintained, according to the patient. Cardiorespiratory auscultation: pure rhythmic tones, with slightly elevated frequency, without tachycardia. Bilateral vesicular murmur was preserved, with no extra sounds. The abdomen was soft, depressible, with no palpable masses or megaliths. There were no signs of peritonism and the hydro-aerial sounds were preserved and not increased. At ENT level and in the head and neck, the pharynx was non-erythematous, with no alterations of interest. There were no cervical, retroauricular, supraclavicular or axillary lymphadenopathies. No palpable goitre. There were no focal or neurological alterations. No oedema or signs of venous thrombosis were observed in the lower limbs. Examination of the locomotor system revealed distal symmetrical polyarthritis with four painful and swollen small joints (PIJ) and two painful large joints (wrist and elbow) in URL; and four painful and swollen joints (PIJ) in ULL. Both ankles were also affected. The knees were unchanged. The rest of the examination was unremarkable.

Among the complementary tests carried out, the following stands out: microcytic anaemia (Hb 11.6 g/dL with MCV of 72.4 fL), without significant alterations in the white series (11,000 leukocytes/L with 52% neutrophils (absolute count of 5,730/L), 38.9% lymphocytes (count of 4,280/L) and 6.8% monocytes (count of 690/L) and thrombocytosis with 930,000 platelets/mm3. The CRP value was 66 mg/L, the ESR was 39 mm/h. Biochemistry, lipid, thyroid and ferric profile values were within normal ranges in our laboratory, with uric acid at 3.4 mg/dL. Urinalysis showed no findings of interest and haemostasia/fibrinolysis parameters were normal except for hyperfibrinogenemia of 678. Positive IgM and IgG class antibodies to SARS-CoV-2 were found. Rose Bengal test was initially positive with a titre of 1:8, but later Brucella serology was negative. All other serologies were negative (HIV 1, HIV 2, HCV, syphilis and R. conorii) or denoted past infections or correct vaccination patterns with positive IgG (CMV, EBV, parvovirus B19, HAV, HBV, rubella and VZV). Molecular diagnostic techniques were performed for STI-causing germs such as C. trachomatis, M. ge-nitalium, M. hominis, U. urealyticum and T. vaginalis, as well as urethral exudate cultures for bacteria, fungi and gonococcus, all of which were negative. The IGRA test was also performed with negative results. HLA-B27 and HLA-B51 were negative in both cases. Rheumatoid factor was 6.2 IU/mL, complement values were 139 mg/dL for C3 and 23.9 mg/dL for C4. The proteinogram showed a pattern with no abnormalities outside normality and the IgA value was 256 mg/dL. In the autoimmunity section, the antinuclear antibodies were negative, as well as the anti-extractable nuclear antigen, anti-double-stranded DNA, anti-myelopeptide oxidase, anti-proteinase-3, anti-cyclic citrullinated peptide and anti-transglutaminase antibodies were negative.

Radiographic series: Chest X-ray shows no parenchymal condensation, no signs of interstitial fibrosis, no pleural effusion, no calcifications, no mediastinal masses and no thickening of the pleura. The cardiothoracic index is less than .5. No bone alterations. The radiograph of the hands and wrists shows slight soft tissue enlargement, but no loss of alignment of the bony structures, destructuring of the distal radioulnar, carpal-radial or carpal-ulnar joints, nor of the proximal or distal metacarpophalangeal or interphalangeal joints. No osteopenia. No bone erosions. No fractures or dislocations. The radiograph of the knees also shows a radiographic pattern within normality.

Using the anamnesis and PPCC described above, we acceptably ruled out a wide variety of rheumatic diseases, and given the history, the compatible clinical features, the positive serology for SARS-CoV-2 and the absence of other more plausible alternatives, we established the diagnosis of reactive arthritis following SARS-CoV-2 viral infection.

Antibiotic treatment was initially prescribed with doxycycline plus gentamicin, which did not improve the patient's condition. Prednisone 30 mg/d was also prescribed in a tapering regimen, which improved the clinical condition, but the symptoms worsened when prednisone was reduced to 5 mg/d, and were controlled again at 10 mg/d.

Discussion

This is not the first case of SARS-CoV-2 reactive arthritis, as there are other articles describing this phenomenon.[2–4] However, to our knowledge, it is the first to describe such an entity in a patient in the age range described, as the others were over 50 years of age. Reactive arthritis, although typically described as oligoarticular involvement of large joints of the lower limbs following urogenital or gastrointestinal infections, can also occur atypically for many other infections.[5] Some studies even link coronavirus infection with the development of RA, although only in women over 60 years of age with no previous history of respiratory pathology.[6] The limitations of this study include the lack of synovial fluid analysis, which was not performed because there was no significant joint effusion to allow sample extraction.

Conclusions

SARS-CoV-2 infection may be a mechanism of atypical reactive arthritis in patients of multiple age ranges, which can be managed with low-dose oral corticosteroids.

Financing

The authors of this article used the resources of the Andalusian Health System to carry out the complementary studies mentioned above. The authors did not receive any additional funding from other entities or third parties.

Conflict of interests

The authors declare that there is no conflict of interest with respect to the information provided in the following case report. For this purpose, they have the express agreement of the patient to publicly disclose the clinical data and results of complementary tests provided.

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