Myositis as a manifestation of SARS-CoV-2

We read with great interest the paper from Monti et al describing clinical course of coronavirus disease 2019 (COVID-19) in patients with chronic arthritis. We would like to emphasise that symptoms mimicking connective tissue disease can occur at the early phase of COVID-19 infection.1

Despite the fact that myalgia has been already reported in several cohorts of patients with COVID-19 infection,2 myositis was not described in these studies. We report a case of a MRI-documented myositis secondary to COVID-19 in a patient. The patient was not under medication prior to the illness. Symptoms appeared suddenly on waking with diffuse myalgias and proximal lower limb muscle weakness, causing him to fall. On arrival at the hospital, the patient was afebrile and did not present any upper or lower airway symptoms. Motor testing revealed a bilateral hip flexion deficit graded at 3/5 on the Medical Research Council (MRC) muscle scale. Initial blood work-up revealed creatine kinase (CK) at 25 384 IU/L (n <195 IU/L), C reactive protein at 54 mg/L and a lymphocytopenia. Initial management consisted of administration of intravenous fluids.

On day 4 after the appearance of symptoms, the patient presented with fever at 39°C. Blood and urine cultures were negative, and nasopharyngeal swab multiplex PCR for respiratory viruses, not including severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was also negative. A chest CT scan on day 4 showed bilateral lower lobe ground-glass opacities. On day 7, the patient desaturated and required oxygen at 1 L/min, and a SARS-CoV-2 nasopharyngeal swab was negative. A proximal lower limb MRI showed bilateral external obturator muscle and quadri-]

Figure 1 Pelvic and thigh MRI. (A) Thigh MRI in T2 STIR sequence showing oedema of the right vastus medialis (arrow). (B) Pelvic MRI in T2 STIR (short T1 inversion recovery) sequence showing bilateral oedema of external obturator muscles (arrows). (C and D) T1 sequences revealing enhancement of muscle lesions after gadolinium infusion (arrows).

mortality. Indeed, some studies reported elevation of N-terminal pro-brain natriuretic peptide (NT-pro-BNP) and troponin.7

In our patient, the subsequent association of myositis followed by interstitial pneumonitis led to the hypothesis of autoimmune myositis but all the immunological tests looking for any forms of myositis were negative.

In conclusion, COVID-19 manifestations, although frequently limited to upper and lower airways, can, as shown in our case, reveal itself by acute myositis. Since the association of muscle inflammation with interstitial pneumonitis can be seen in either COVID-19 or autoimmune myositis, this differential diagnosis should be known by clinicians.

Maxime Beydon,1 Kevin Chevalier,2 Omar Al Tabaa,1 Sabrina Hamroun,1 Anne-Sophie Delettre,1 Marion Thomas,1 Julia Herrou,1 Elodie Riviere,1,2 Xavier Mariette1,2
1Department of Rheumatology, Bicêtre Hospital, Le Kremlin-Bicêtre, France
2Université Paris-Saclay, INSERM UMR1184, Le Kremlin-Bicêtre, France

Correspondence to Professor Xavier Mariette, Department of Rheumatology, Bicêtre Hospital, Le Kremlin-Bicêtre 94270, France; xavier.mariette@ap-hop.fr

Contributors MB, KC and OAT wrote the manuscript. SH, ER reviewed and corrected the manuscript. A-SO, MT and JH reviewed the manuscript. XM reviewed, corrected the manuscript and helped for the submission.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, conduct, reporting or dissemination plans of this research.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; internally peer reviewed.

This article is made freely available for use in accordance with BMJ’s website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.

© Author(s) (or their employer(s)) 2021. No commercial re-use. See rights and permissions. Published by BMJ.

MB and KC are co-first authors.


Received 10 April 2020
Accepted 15 April 2020
Published Online First 23 April 2020


ORCID iDs
Kevin Chevalier http://orcid.org/0000-0001-7823-1827
Sabrina Hamroun http://orcid.org/0000-0003-2721-1249

REFERENCES