Coronavirus disease 2019–related Kawasaki-like disease in an adult: A case report

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INTRODUCTION

In late 2019, a new viral infection emerged from China, spreading worldwide to cause a pandemic. This coronavirus disease 2019 (COVID-19) is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Different clinical patterns have occurred, including a Kawasaki-like disease in children.[1] This report describes a similar case in an adult.

Abbreviations used:

COVID-19:	coronavirus disease 2019
KD:	Kawasaki disease
SARS-CoV-2:	severe acute respiratory syndrome coronavirus 2

CASE REPORT

In late April, 2020, a previously healthy 35-year-old woman was admitted to the infectious diseases department for a 4-day history of fever, myalgia, dyspnea, dry cough, hypogeusia, vomiting, diarrhea, and a pruritic rash. On physical examination, she was weak, irritable, and febrile (38.4°C). She had chapped lips with ulceration above the upper lip (Fig 1), lingual enanthem characterized by a reddish and swollen tongue, bilateral erythematous conjunctivitis, edema of hands and feet, and hepatomegaly. She also presented with a rash on the legs and forearms characterized by erythemato-violaceous macules with irregular borders (Fig 2). She had no cervical lymph node enlargement. Chest auscultation found regular tachycardia and fine crackles on the lower lobes.

Full blood count showed anemia, thrombocytopenia, neutrophilia, lymphopenia, and slight eosinophilia. Laboratory values were C-reactive protein, 367 mg/L (normal <5.0 mg/L); ferritin, 5384 μg/L (67.5-449 μg/L); lactate dehydrogenase, 4.57 μkat/L (2.25-3.57 μkat/L); and triglycerides, 3.42 mmol/L (<1.70 mmol/L). Liver function tests were slightly abnormal (alanine aminotransferase, 1.03 μkat/L [<0.55 μkat/L] and aspartate aminotransferase, 1.07 μkat/L [<0.53 μkat/L]). A bone marrow aspiration was not performed. She had acute renal impairment, and urinalysis results showed hematuria, leukocyturia, and nonnephrotic proteinuria. There was no serologic evidence of connective tissue disease. Serologic assay for HIV was negative. Antibodies against Epstein-Barr virus, cytomegalovirus, and parvovirus B19 were indicative of past infection. Peripheral blood immunophenotyping was normal. Blood and urinary cultures remained negative. Diagnosis of COVID-19 was based on reverse transcription polymerase chain reaction for SARS-CoV-2 from nasopharyngeal swab and thoracoabdominal computed tomography, which showed peripheral interstitial infiltrates of the lower pulmonary lobes and hepatosplenomegaly. Initially, serum cardiac markers such as n-terminal pro–brain natriuretic peptide and troponins were normal but increased on the third day of hospitalization. Electrocardiogram showed sinus tachycardia. Echocardiography was unremarkable, whereas cardiac magnetic resonance imaging, obtained after 1 week, showed global hypokinetic

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Fig 1. Chapped lips with isolated ulceration above the vermillion border on the side of the upper lip.

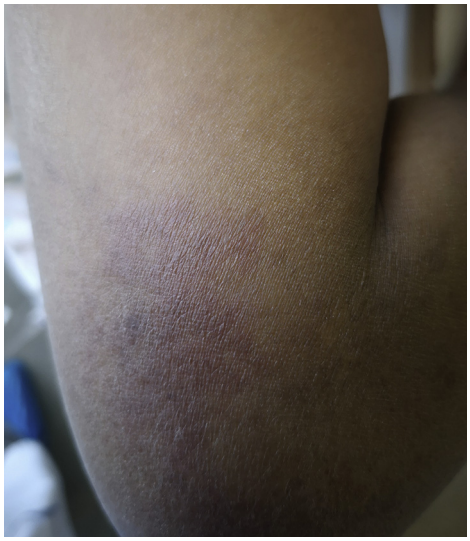

Fig 2. Macular rash with some postinflammatory hyperpigmentation on the right proximal forearm.

myocardia. She did not undergo coronary angiography. Hydroxychloroquine, azithromycin, and cefuroxime were empirically given for a total of 5 days without any complication. During the second (and last) week of hospitalization, evolution of inflammatory parameters (ferritin, leucocytosis, and C-reactive protein) were favorable together with cardiac (n-terminal pro—brain natriuretic peptide and troponins) and liver markers (aspartate aminotransferase and alanine aminotransferase) and urinary findings (hematuria, leukocyturia, and proteinuria). The lingual enanthem and acral edema resolved within 10 days, whereas the conjunctival injection and chapped lips remained. Four weeks after the onset of the symptoms, desquamation of the hands and feet (Fig 3) occurred. The diagnosis of Kawasaki-like disease was retrospectively suggested, and the patient was subsequently requested to undergo coronary investigation.

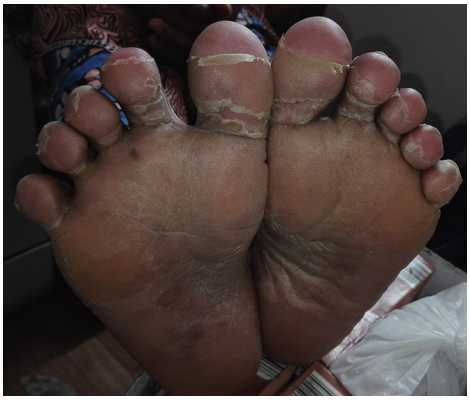

Fig 3. Plantar desquamation.

DISCUSSION

Kawasaki disease (KD), described by Tomisaku Kawasaki in 1967, is a systemic vasculitis of unknown origin that occurs mainly in children and seldom in adults.[2] Infectious triggers may lead to an exaggerated inflammatory response explaining the clinical findings in KD.[2] Although incomplete forms of KD exists, diagnosis of KD requires the presence of fever for at least 5 days, 4 of the 5 Kawasaki established criteria (bilateral conjunctival infiltrate, changes of the mucous membranes of the upper respiratory tract, polymorphous rash, changes of the extremities, and cervical adenopathy) and the lack of alternative explanation.[2] Our patient fulfilled all the criteria for KD except cervical lymphadenopathy.[2] Accordingly, this patient had a Kawasaki-like disease associated with COVID-19 infection. In the time of the COVID-19 pandemic, several recent clinical reports underline the observation of Kawasaki-like disease in children.[1] The diagnosis may be challenging and retrospective, as no specific tests exist. Coronary involvement is the main complication of KD but remains less frequent in adults than in children.[3] Early diagnosis allows treatment with intravenous immunoglobulins and aspirin. Intravenous immunoglobulins should be given within the first 10 days but its administration may also be beneficial for delayed diagnosis in some cases.[4] Health professionals should be aware of novel and rare presentations of COVID-19, including pediatric and adult-onset Kawasaki-like disease, especially given the potential complications and therapeutic implications.

REFERENCES

1. Royal College of Paediatrics and Child Health. Guidance—Paediatric multisystem inflammatory syndrome temporally associated with COVID-19. Available at: https://www.rcpch.ac.uk/resources/guidance-paediatricmultisystem-inflammatory-syndrome-temporally-associated-covid-19; 2020. Accessed May 5, 2020.

2. Burns JC, Glode MP. Kawasaki syndrome. *Lancet*. 2004;364:533-544.
3. Fraison JB, Sève P, Dauphin C, et al. Kawasaki disease in adults: observations in France and literature review. *Autoimmun Rev*. 2016;15:242-249.
4. McCrindle BW, Rowley AH, Newburger JW, et al. Diagnosis, treatment, and long-term management of Kawasaki disease: a scientific statement for health professionals from the American Heart Association. *Circulation*. 2017;135:e927-e999.