Correspondence on 'Paediatric multisystem inflammatory syndrome temporally associated with SARS-CoV-2 mimicking Kawasaki disease (Kawa-COVID-19): a multicentre cohort' by Pouletty *et al*

We read with great interest the article by Pouletty *et al* reporting 16 paediatric patients presenting with Kawa-COVID-19, an inflammatory syndrome similar to Kawasaki disease (KD) associated with SARS-CoV-2 infection.[1] All 16 patients met criteria for complete or incomplete KD. Severe cases in children involving systemic inflammation and multiorgan involvement related to COVID-19 are increasingly being reported. These cases, named multisystem inflammatory syndrome in children (MIS-C) in the USA and pediatric multisystem inflammatory syndrome temporally associated with SARS-CoV-2 in the UK, share features of both KD and macrophage activation syndrome.[2–6] In contrast to children, few adults with KD-like cases have been reported.[7 8] Herein, we describe an adult who presented with KD-like illness similar to children in the Kawa-COVID-19 cohort 4 weeks following a documented SARS-CoV-2 infection.

A 38-year-old Hispanic woman developed fever, dyspnoea, cough, anosmia, myalgias and polyarthralgias of the hands, wrists, elbows and knees 4 weeks prior to admission. At that time, nasopharyngeal SARS-CoV-2 PCR was positive. Her symptoms completely resolved within 2 weeks. Five days prior to admission, she developed fevers up to 39.4°C, dyspnoea and polyarthralgias. Additionally, she described occipital headaches, conjunctival injection, lip peeling, odynophagia, vomiting and a maculopapular rash on her chest and arms (figure 1A). The conjunctival injection and rash resolved within a week, but arthralgias, dyspnoea and fevers persisted.

On admission, vitals showed temperature 39.1°C, pulse 114 beats/min, blood pressure 114/67 mm Hg and 97% oxygen saturation. Physical examination revealed clear conjunctiva, erythematous tongue, lip peeling, clear lung fields and a normal cardiac examination with exception of tachycardia (figure 1B). Musculoskeletal examination demonstrated synovitis of the proximal interphalangeal joints. On hospital day 4–5, she developed palmar erythema and discoloration of two toes (figure 1C,D).

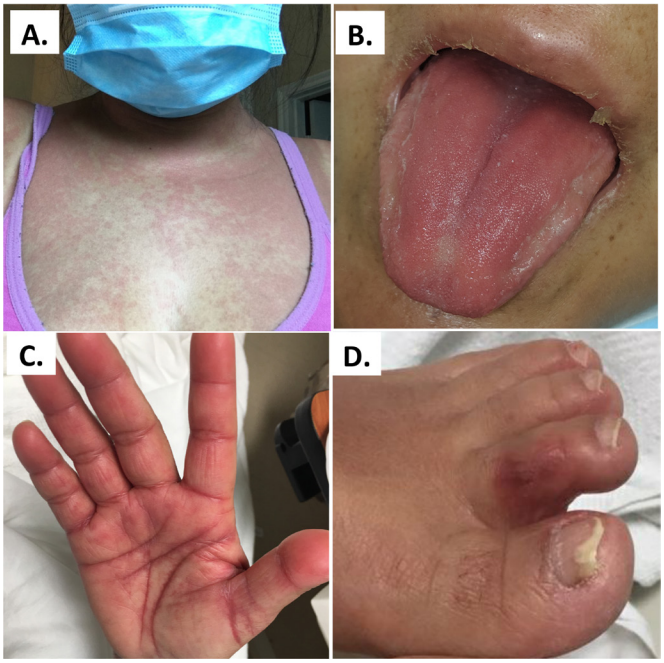

Figure 1 (A) Maculopapular rash on chest. (B) Dry oral mucosa with peeling lips. (C) Palmar erythema. (D) Toe discoloration.

Admission laboratories showed alanine aminotransferase (126 units/L (7–52)), alkaline phosphatase (337 U/L (24–104)), B-natriuretic peptide (404 pg/mL (<100)), sedimentation rate (34 mm/hour (<20)), C-reactive protein (21.7 mg/dL (<10)), d-dimer (0.77 μg/mL fibrinogen equivalent units (0.27–0.48)), an absolute lymphocyte count of 560 per μL (1.18–3.74) and albumin of 3.3 g/dL (3.7–5.3). Serum creatinine, troponin, creatine kinase, lactate dehydrogenase, haptoglobin and ferritin were normal. Repeat nasopharyngeal SARS-CoV-2 PCR and serum IgG and IgA to the spike protein of SARS-CoV-2 were positive. Infectious workup was negative, including blood and urine cultures as well as testing for HIV-1/2, parvovirus, arbovirus, gonorrhoea, chlamydia and murine typhus. Echocardiogram showed trace pericardial effusion, elevated pulmonary artery pressure (46–51 mm Hg), and normal left ventricular ejection fraction but no coronary artery abnormalities. CT chest with angiography was negative for pulmonary emboli but showed right upper lobe ground glass opacities, septal and bronchial wall thickening, and bilateral pleural effusions.

This patient met diagnostic criteria for both KD and MIS-C, with the exception of age.[3 9] Accordingly, she was treated with intravenous immunoglobulin (IVIG) 80 g on hospital day 1 and 81 mg of aspirin daily. On hospital day 3, due to persistent fevers, she was given a second dose of IVIG (100 g). Prednisone 10 mg daily was given for the inflammatory arthritis. She defervesced and her symptoms improved by hospital day 6. She was discharged on hospital day 7 with daily aspirin 81 mg for 6 weeks and prednisone taper from 10 mg over 5 weeks. Two weeks post hospital discharge, she reported desquamation of the hands and feet, and her only remaining symptoms were bilateral ankle arthralgia and mild headaches.

This case describes an adult with a KD-like presentation following a SARS-CoV-2 infection similar to the Kawa-COVID-19 cohort described by Pouletty *et al*. KD in adults is rare and often associated with HIV infection.[10] KD-like presentations in the setting of COVID-19 have been reported in two adults, but the time of initial SARS-CoV-2 infection in relation to KD-like presentation was unknown.[7 8] Our case demonstrates a timeline of a symptomatic COVID-19 infection followed by complete symptom resolution prior to the onset of a KD-like illness. This case emphasises the need for adult as well as paediatric rheumatologists to be aware of the potential for KD-like illness from COVID-19 infection. Further study of this and similar cases is important to aid clinicians in recognising SARS-CoV-2-related inflammatory syndromes in adults.

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