

Letters to the Editor

Case Report: Multisystem Inflammatory Syndrome in a Child Presenting with Rash and Fever

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To the Editor: A mother brought her 22-month-old child to our outpatient health center with a generalized rash and fever. Patient history included febrile seizures, overweight (greater than the 99th percentile), reactive airway disease, and eczema. The child had been tugging their ears for four days and had a rash on the cheeks that spread to the trunk and extremities. Two months earlier, six household members tested positive for coronavirus disease 2019 (COVID-19).

The physical examination was notable for fever (102°F [38.9°C]); tachypnea (respiratory rate of 22 breaths per minute); bilateral ear cerumen; and a diffuse macular rash that was blanchable, erythematous, and warm. We presumed a diagnosis of multisystem inflammatory syndrome and referred the child to the emergency department where the patient had two witnessed generalized tonic-clonic seizures. A COVID-19 test was negative, and an immunoglobulin G antibody test was positive. Inflammatory markers were elevated, including erythrocyte sedimentation rate (27 mm per hour), C-reactive protein (38.8 mg per dL [388 mg per L]), D-dimer (1.90 mcg per mL [10.40 nmol per L]), and interleukin-6 (47.9 pg per mL). White blood cell count, ferritin, fibrinogen, and lactic acid dehydrogenase values were within normal limits. Pro-brain natriuretic peptide (pro-BNP) was 131 pg per mL [131 ng per L]. Respiratory viral panel results were negative. The child received one dose of intravenous ceftriaxone (Rocephin) for suspected otitis media and

was admitted to the intensive care unit. During the hospital stay, bilateral angular stomatitis developed with painful vesicular lesions on the tongue with rising inflammatory markers and an extremely elevated pro-BNP level of 2,900 pg per mL (2,900 ng per L). Echocardiogram results were normal. After three days of enoxaparin (Lovenox) and intravenous immunoglobulin at 2 g per kg, the patient had improved oral intake, resolution of fever, and a downtrend in inflammatory markers. The patient was discharged on low-dose aspirin and referred to cardiology for a repeat echocardiogram in four weeks.

Symptoms of multisystem inflammatory syndrome in children often overlap with those of other childhood inflammatory diseases (e.g., Kawasaki disease),^{1,2} making it difficult to diagnose.³ Patients who present with fever, rash, abdominal or chest pain, conjunctivitis, or oral mucosal erythema should be evaluated with pulse oximetry monitoring. Laboratory testing should include a complete blood count with differential, comprehensive metabolic panel, erythrocyte sedimentation rate, and C-reactive protein and ferritin levels.⁴

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