Acute Appendicitis in Multisystem Inflammatory Syndrome

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To the Editor: Features of acute appendicitis in severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) related multisystem inflammatory syndrome in children (MIS-C) can cause a diagnostic dilemma. We present a 6-y-old boy with fever for 6 d, vomiting, and abdominal pain. Examination was unremarkable. Hemoglobin was 12 g/dL, total leucocyte count 5600/mm³, platelet count 160,000/mm³, and C-reactive protein (CRP) 166 mg/L. Ultrasonogram showed thickened, noncompressible appendix measuring 7.1 mm, paracolic inflammatory changes, multiple lymph nodes, collapsed distal ileum, and probe tenderness in right iliac fossa suggesting acute appendicitis. Intravenous fluids and broad spectrum antibiotics were started. Polymerase chain reaction for SARS-CoV2 was negative. Lack of leucocytosis, borderline low platelet count and significantly elevated CRP were against uncomplicated acute appendicitis. MIS-C was suspected. Serum ferritin was 703 ng/ml (20–200), d-dimer 1431 ng/mL (< 300), troponin I 0.18 ng/mL (0–0.03) and N-terminal brain natriuretic peptide level 17,296 pg/mL (0–300). Prothrombin time and activated partial thromboplastin time were prolonged. Echocardiogram revealed mild dilation of left main coronary artery (LMCA) and anterior descending arteries (+2.37 and + 2.43 z scores, respectively); ejection fraction was normal. Immunoglobulin M (IgM) and IgG for SARS-CoV2 were positive, confirming MIS-C. With intravenous immunoglobulin and aspirin, fever subsided; CRP was 70 mg/L. Echocardiogram 6 wk later revealed persisting dilation of LMCA. Aspirin was continued at 3 mg/kg/d.

MIS-C can mimic acute appendicitis leading to delayed diagnosis. Moreover, acute appendicitis can be a part of the

multisystem inflammation in MIS-C [1–4]. SARS-CoV-2-induced inflammation and vasculitis through angiotensin-converting enzyme 2 receptors in the terminal ileum are the suspected mechanisms [1]. MIS-C coexisting with perforated appendicitis requiring surgery has also been reported [2–4]. Normal leukocyte count, low platelets, significantly raised inflammatory markers, and echocardiographic changes can confirm MIS-C. MIS-C is an important differential diagnosis in all children with acute appendicitis during the current pandemic.

Declarations

Conflict of Interest None.

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