

## Radiologic Manifestations of Multisystem Inflammatory Syndrome in Children

We read with curiosity the recently published article by Blumfield et al. [1], which evaluated imaging findings of multisystem inflammatory syndrome in children (MIS-C) associated with COVID-19. The article provides considerable insight regarding radiologic findings of MIS-C and helps address major gaps in data.

A balanced immune response is the primary mechanism behind the mild clinical course of coronavirus disease (COVID-19) in children; this reduced immune response to severe acute respiratory syndrome coronavirus 2 prevents the development of severe respiratory symptoms [2]. However, delayed elimination of the virus from the body produces a prolonged immune response that may occasionally result in the development of MIS-C [2, 3].

Herein, we intend to present the radiologic manifestations of MIS-C in various body systems as seen in 16 patients with MIS-C who were examined at our clinic during 2020. MIS-C was diagnosed on the basis of CDC criteria [3]. The patients were 1 month to 17 years old, with five younger than 1 year old. Eight of the patients (50%) were male. Clinical presentation consisted of fever ( $n = 14$ ; 87.5%), cough ( $n = 10$ ; 62.5%), respiratory distress ( $n = 9$ ; 56.3%), and abdominal pain ( $n = 6$ ; 37.5%).

Twelve patients (75.0%) had radiologic findings in the chest. The most prevalent findings were cardiomegaly, pleural effusion, and pulmonary vascular congestion.

In five of six patients (83.3%) who required radiologic assessment of the abdomen, the most common finding was mild ascites. The next most prevalent findings were urinary bladder wall thickening and increased kidney parenchyma echogenicity as well as nephromegaly. One patient who presented with abdominal pain showed mesenteric lymphadenopathy, and this was accompanied by bowel wall thickening and enhancement as well as a prominent increase in the diameter of the appendix. Cervical

lymphadenopathy was an additional radiologic finding that was observed in only one patient.

Similar to patients reported in the literature, the patients with MIS-C in our study primarily had collective respiratory and cardiovascular system findings (Fig. 1), including cardiomegaly, pleural effusion, pulmonary vascular congestion, thickened septal lines caused by interstitial edema, and ground-glass opacities in the lower lobes [1, 3]. Furthermore, abdominal findings were more heterogeneous (Fig. 2).

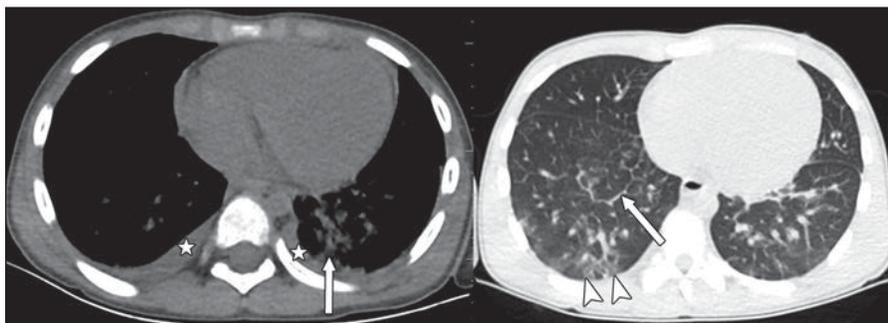
A global increase in cases of MIS-C is most certainly impending. It is crucial that radiologists become familiar with the diverse radiologic findings associated with this condition, because no single specific finding exists. We believe that clarification of these findings will improve management of the diagnosis and treatment process.

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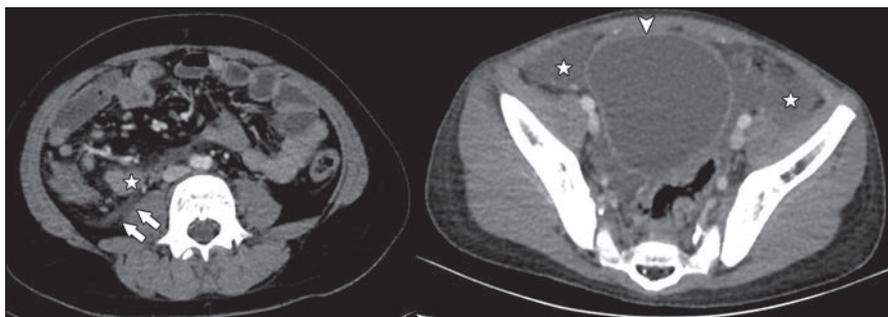
The authors declare that they have no disclosures relevant to the subject matter of this letter.

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**Fig. 1**—Chest CT findings for two patients with multisystem inflammatory syndrome in children. Unenhanced CT image in mediastinum window (left) shows bilateral small pleural effusions (stars), peribronchovascular airspace opacities within lower lobe (arrow), and cardiomegaly with minimal pericardial fluid in lower chest of 8-year-old boy. CT image in lung window (right) reveals bilateral interlobular septal thickening (arrow), focal ground-glass opacities (arrowheads), and pulmonary vascular congestion within lung parenchyma in lower lungs of 13-year-old boy.



**Fig. 2**—Abdominopelvic CT findings for two patients with multisystem inflammatory syndrome in children. Contrast-enhanced CT image of abdomen of 8-year-old girl (left) shows mesenteric lymph node enlargement (star) and small posterior peritoneal fluid (arrows). Contrast-enhanced CT image of pelvis of 7-year-old boy (right) shows ascites (stars) and bladder wall thickening (arrowhead).

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