Intracardiac Thrombi and Pulmonary Thromboembolism in a Child with Multisystem Inflammatory Syndrome in Children (MIS-C)

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To The Editor: Multisystem inflammatory syndrome in children (MIS-C), a postinfectious immune-mediated reaction to SARS-CoV-2 exposure, has cardiac and gastrointestinal involvement commonly, neurological involvement less commonly [1], and is also a state of altered coagulation, with reported rates of thromboembolism ranging from 3% to 6.5% [2].

A 16-year-old boy was admitted with a history of fever and loose stools for two days, and weakness in all four limbs for one day. There was no history of loss of consciousness, seizures, trauma, drugs/substance abuse; he was conscious, oriented, and had normal higher functions, with no cranial nerve, sensory, or cerebellar involvement. There was mild hypotonia, power grade 3/5 in all four limbs. Deep tendon, superficial and plantar reflexes were absent. Guillain-Barré syndrome was the first differential, and intravenous immunoglobulin was started.

Within 12 h of admission, weakness rapidly progressed in an ascending fashion with power reduced to grade 1/5 in all limbs, and required intubation. Investigations showed increased CRP, D-dimer, LDH, positive anti-SARS-CoV-2 IgG antibody. MIS-C with neurological involvement was thought, and intravenous methylprednisolone and injection heparin were started. He had signs of autonomic dysfunction, and suddenly went into cardiac arrest, but was revived. Echocardiography showed multiple thrombi in the right ventricle and pulmonary artery, and severe ventricular dysfunction. He had multiple convulsions and high-grade fever, followed by second cardiac arrest, to which he succumbed.

In a recent review of neurological manifestations in COVID-19 [3], 54% children had MIS-C; of which, only 2 (3.4%) had muscular paresis/plegia. Acute flaccid paralysis is reported in acute COVID-19, but is a rare manifestation of MIS-C [3]. Intracardiac thrombus is even rarer [4]. Unfortunately, our patient had both the rare involvements. Neurological deterioration was rapid, and pulmonary emboli caused repeated cardiac arrests. Our case highlights the fact that irrespective of the presenting symptoms in MIS-C, cardiac involvement should be anticipated, with preparedness for rare complications.

Declarations

Conflict of Interest None.

References

1. Feldstein LR, Rose EB, Horwitz SM, et al. Multisystem inflammatory syndrome in US children and adolescents. *N Engl J Med*. 2020;383:334–46.
2. Whitworth H, Sartain SE, Kumar R, et al. Rate of thrombosis in children and adolescents hospitalized with COVID-19 or MIS-C. *Blood*. 2021;138:190–8.
3. Siracusa L, Cascio A, Giordano S, et al. Neurological complications in pediatric patients with SARS-CoV-2 infection: a systematic review of the literature. *Ital J Pediatr*. 2021;47:123.
4. Schroder J, Lund MAV, Vejstrup N, Juul K, Nygaard U. Left ventricular thrombus in multisystem inflammatory syndrome in children associated with COVID-19. *Cardiol Young*. 2022;32:138–41.

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