PICTURE OF THE MONTH



Hemorrhagic Nonpurulent Conjunctivitis in MIS-C

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Three male children (5-8 y) presented with 5-7 d history of fever, abdominal pain, vomiting, rash, and redness of eyes. Examination revealed features of shock and respiratory distress, macular erythematous rash, periorbital puffiness, and nonpurulent conjunctivitis with subconjunctival hemorrhages (Fig. 1). All had negative severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) reverse transcription polymerase chain reaction (RT-PCR). Cases 1 and 3 had positive SARS-CoV-2 antibody, and case 2 had contact with coronavirus disease 2019 (COVID-19) patient. All had neutrophilic leucocytosis, lymphopenia, and thrombocytopenia; and elevated C-reactive protein (CRP), procalcitonin, d-dimer, fibrinogen, ferritin, and pro-BNP. Echocardiography revealed low ejection fraction (40%-50%) in all and coronary artery dilatation in two cases. The diagnosis of multisystem inflammatory syndrome in children (MIS-C) was considered and treatment

included mechanical ventilation (noninvasive in 2 and invasive in 1), fluid boluses, vasoactive support, methylprednisolone (10 mg/kg/d for 3 d) and intravenous immunoglobulin (IVIG) (2 g/kg), and aspirin (3 mg/kg/d). All cases improved and were discharged after 5 to 7 d on oral steroids and aspirin, which were stopped over the next 4–6 wk.

The conjunctivitis is documented in around 40%-56% children with MIS-C [1-3]. Eye manifestations in the three cases with MIS-C were labelled as hemorrhagic nonpurulent conjunctivitis and this finding, described for the first time, can be an important clue to the diagnosis of MIS-C. It took 2–3 wk for hemorrhagic nonpurulent conjunctivitis to resolve. The authors hypothesize that the causes for hemorrhagic nonpurulent conjunctivitis are SARS-CoV-2-induced endothelial cell damage and necrosis or vasculitis of conjunctival vasculature.

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Declarations

Conflict of Interest None.

References

 Williams V, Dash N, Suthar R, et al. Clinicolaboratory profile, treatment, intensive care needs, and outcome of pediatric inflammatory multisystem syndrome temporally associated with SARS-CoV-2: a systematic review and meta-analysis. J Pediatr Intensive Care. 2020. https://doi.org/10.1055/5-0040-1719173.

- Dufort EM, Koumans EH, Chow EJ, et al. Multisystem inflammatory syndrome in children in New York state. N Engl J Med. 2020;383:347–58.
- Godfred-Cato S, Bryant B, Leung J, et al. COVID-19-associated multisystem inflammatory syndrome in children - United States, march-july 2020. MMWR Morb Mortal Wkly Rep. 2020;69:1074– 80.

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