Case Report
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Coronary aneurysms associated with pediatric multisystemic inflammatory syndrome post COVID-19

Abstract

Among the clinical manifestations of SARS-CoV-2 in pediatrics is the multisystem inflammatory syndrome in children (MIS-C), which can have a presentation similar to incomplete or complete Kawasaki disease (KD).[1,2] Next, will be presented the case of a 1 year 4-month-old female infant who developed a MIS-C as an incomplete KD associated with the appearance of coronary and anterior descending arteries aneurisms.

Keywords: COVID-19, multisystem inflammatory syndrome in children, Kawasaki disease, coronary aneurism

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Introduction

MIS-C associated with COVID-19 can present as complete and incomplete KD. Therefore, it is recommended to manage these cases with standardized KD protocols to prevent complications in the coronary vessels.[2,3] The following is a case of a 1-year-old female infant aged 1 year 4 months who developed multiple aneurysms in coronary and anterior descending arteries due to MIS-C associated with COVID-19.

Case presentation

Female infant, 1 year 4 months old, native and resident of Sanarate, El Progreso, Guatemala, with no pathological personal history, normal growth and development and complete vaccination schedule for her age, who was referred by a private physician due to fever of 20 days of evolution. The patient started with diarrhea and fever, for which she consulted and was given antibiotic treatment with trimethoprim sulfamethoxazole for 5 days. After 3 days of treatment, fever persists and polymorphous exanthema and bilateral non-exudative conjunctivitis appear. She consults again and the mother is told that the patient is suffering from dengue fever, so she is kept under observation for one day. Fever continues, so she is admitted to the sanatorium where laboratory studies show white blood cells (WBC): 19,500, hemoglobin (Hb): 9.5 g/dL, platelets (plq): 896,000 mm^3, C-reactive protein (CRP): > 300, sedimentation rate (SR): > 100. Antibodies for SARS VOC 2 were found to be IgM (+), so an echocardiogram was performed showing only a slight pericardial effusion without hemodynamic repercussions.

On admission, 20 days after the onset of symptoms, the patient was clinically stable, with febrile fever (axillary temperature 37.5°C) and no clinical manifestations suggestive of KD. Laboratory tests showed leukocytosis, mild anemia, thrombocytosis (1,370,000 mm^3 platelets), and elevated acute phase reactants. A PCR for SARS-CoV-2 was performed, which was negative. A peripheral smear was performed showing normal erythrocyte distribution, discrete leukocytosis, polymorphonuclear 90% with toxic granulation and severe thrombocytosis (1,572,000 mm^3) and abundant platelet aggregates. Treatment was started with acetylsalicylic acid (ASA) at 80 mg/kg/day for 72 hours and methylprednisolone at 2 mg/kg/day. Due to the time of evolution of the case, it was decided not to start intravenous immunoglobulins (IVIG).

A control echocardiogram was performed in the Cardiovascular Surgery Unit of Guatemala (UNICAR) 12 days after the previous one, which no longer shows mild pericardial effusion, but shows a small aneurysm in the right coronary (3 mm, Z + 4.03), a giant aneurysm in the left coronary (5.5 mm, Z + 10.54) (Figure 1A) and a medium aneurysm in the anterior descending artery (4.3 mm, Z + 8.0) (Figure 1B). The patient was left in charge of cardiology, who decided to discharge him home with ASA at 5 mg/kg/day and warfarin at 2 mg/day to maintain an INR between 2.5 and 3.5, and an appointment for a control echocardiogram 1 month later.

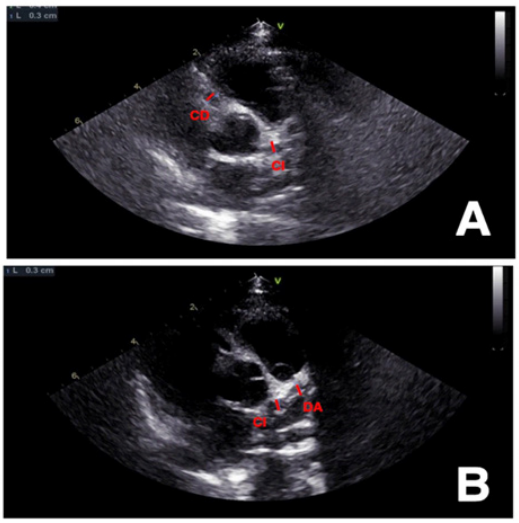

Figure 1 Coronary and anterior descending aneurysms. **(A)** Small aneurysm in the right coronary artery (RCA) and giant aneurysm in the left coronary artery (LCA). **(B)** Giant aneurysm in IC and medium aneurysm in anterior descending (AD).

Discussion

As the SARS-CoV-2 pandemic has progressed, an increase in SARS-C MIS-C cases has been seen. Patients who meet criteria for complete or incomplete KD should receive standardized KD therapies, including ASA at doses of 30-80 mg/kg/day (maximum 4 g/day) until 48 hours after resolution of fever and tapering to maintenance doses of 3-5 mg/kg/day, IVIG 2g/kg in one dose, and if necessary, glucocorticoids.[2] We presented the case of an infant who presented MIS-C and a positive IgM for SARS-CoV-2. The patient presented with coronary and anterior descending aneurysms. Aneurysms are classified according to the patient's Z score, comparing it with the average of those with the same age and body surface area.[4] The patient had a small aneurysm in right coronary (Z + 4.03) giant aneurysm in left coronary (Z + 10.54) and medium aneurysm in anterior descending (Z + 8.0). This case leads to reflection on the importance of recognizing the clinical manifestations of MIS-C and following a standardized protocol in health services for patients who manifest complete or incomplete KD at the appropriate time in order to avoid this type of complication.

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Conflicts of interest

The authors declare no conflicts of interest.

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