

Novel Coronavirus Mimicking Kawasaki Disease in an Infant

Coronavirus disease (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) uncommonly causes severe disease in children [1]. Over the last two months; however, a new hyper inflammatory condition manifesting as Kawasaki disease or Kawasaki-like shock syndrome has been described in children above 4 years of age, across Europe and USA [2-4], with increased risk of mortality. One case from India has also been reported [5]. Here we report an infant presenting with fever and clinical manifestations of Kawasaki disease and subsequently screening positive for COVID-19.

A 4-month-old healthy baby, weighing 5.6 kg, and born to non-consanguineous parents, presented with high-grade fever for 4 days. Fever was spiking 6-8 hourly reaching 39 °C. He developed an erythematous macular rash over the trunk, palm and sole on second day. On admission the child was hemodynamically stable and was breastfeeding normally. He was very irritable with red lips, congested throat and small cervical lymphadenopathy without any cough or nasal congestion. He had clear chest, normal regular heart sounds and a saturation of 97-98% in air. Investigations revealed a hemoglobin of 9.9 g/dL, total leucocyte count of 14770/mm³ with 50% neutrophils, platelet count 4.25×10⁹/L, C-reactive protein (CRP) of 115.6 mg/L, normal liver enzymes with albumin 30 g/L and globulin of 22 g/L, and a normal chest X-ray. His nasopharyngeal swab was sent for SARS-CoV-2 RT-PCR and other viral PCR tests. Treatment was started with meropenem and vancomycin after sending blood and urine

culture, but fever continued till the third day of admission, when he developed non-purulent conjunctivitis with left subconjunctival hemorrhage. Repeat CRP showed a higher value of 178.2 mg/L. With evolving clinical signs simulating Kawasaki disease, an echocardiography was performed. It showed normal left ventricular function, perivascular brightness and diffuse ectasia of coronary arteries with left middle coronary artery (LMCA) of 2.7 mm (Z score +2.6) (**Fig. 1a**), left anterior descending artery of 2 mm (Z score +2.9) and proximal right coronary artery (RCA) of 2.4 mm (Z score +3.6) (**Fig. 1b**). Oral aspirin (80 mg/kg) and intravenous immune-globulin (IVIG) (2 g/kg) therapy was started. He stayed stable clinically and did not need intensive care. Fever subsided after 24 hours of finishing IVIG infusion, and the child became playful. Subsequently, SARS-CoV-2 reverse transcriptase polymerase chain reaction (RT-PCR) showed a positive result and he was shifted to a COVID-designated hospital. All cultures were negative till 7 days. Repeat blood test revealed a downward trend of CRP (148 mg/L). Swab for other viruses was negative. To date the baby is stable, afebrile, and is kept under observation in the pediatric ward. His mother was also subsequently found positive for SARS-CoV-2.

Children of all ages can acquire COVID-19, although they appear to be affected less commonly than adults [1,6,7]. The most common symptoms in pediatric SARS-CoV2 infection are fever and cough [1,6]. This infant also presented with fever but his extreme irritability was unusual. In a previous series, approximately 11% of infants had severe or critical disease [1]. This infant was never critical throughout the period of hospitalization.

During this pandemic, Jones, *et al.* [2] published the first case of a 6-month-old female admitted and diagnosed with classic Kawasaki disease, which tested positive for COVID-19. This

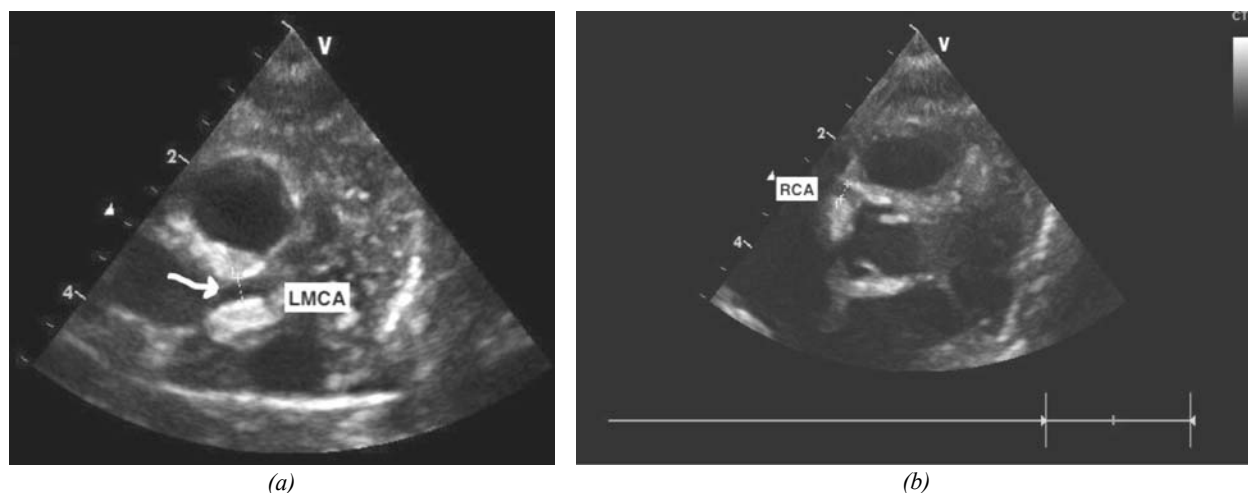


Fig. 1 Ectasia of (a) left main coronary artery (LMCA) and (b) right coronary artery (RCA).

was followed by more similar reports of children with COVID-19 and clinical features that are similar to those of toxic shock syndrome and atypical Kawasaki disease and laboratory findings associated with increased inflammation [3-5]. Royal College of Paediatrics and Child Health (RCPCH) labeled this new inflammatory entity as Paediatric multisystem inflammatory syndrome temporally associated with COVID-19 [8]. Case definitions include persistent fever, inflammation and evidence of single or multi-organ dysfunction after exclusion of other microbial causes. The case mentioned showed a rise of CRP without any neutrophilia, lymphopenia or organ dysfunction.

Our case was very similar to that described by Jones, *et al.* [2] but that girl had persistent tachycardia and most of the clinical features of KD with normal echocardiography. Riphagen, *et al.* [3] reported a case series of 8 children (only 3 tested COVID-19 positive) needing intensive care support with a hyper-inflammatory shock. One child died after a massive cerebral infarction. All of them had features mentioned in RCPCH guidelines with minimal respiratory symptoms [3]. These children and the two infants with Kawasaki disease most likely had a similar pathogenesis with varied consequences, which needs further research to define it.

India is still in the early stage of this pandemic and has not yet had many children with severe COVID-19. This 4-month-old child presenting as typical Kawasaki disease represents a novel presentation among the very young population with COVID-19.

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**BHASWATI C ACHARYYA^{1*}, SAUMYABRATA ACHARYYA² AND
DHRITABRATA DAS³**
*Departments of¹Pediatric Gastroenterology,
²Pediatrics, and³Pediatric Cardiology,
AMRI Hospitals, Kolkata, West Bengal, India.
bacharyya21@gmail.com

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Portal Hypertension in a Case of Klippel Trenaunay Syndrome

Klippel Trenaunay syndrome (KTS) is a sporadic disorder that belongs to PIK3CA-related overgrowth spectrum of disorders. The diagnostic criteria for KTS comprise of presence of capillary malformation, venous with or without lymphatic malformation and limb overgrowth. Only 63% patients have all three clinical manifestations [1]. Here we describe a case of KTS presenting as mixed venolymphatic malformation with complication in the form of portal hypertension due to dysplastic portomesentric veins.

We report an 11-year-old girl who presented with swelling of the right gluteal region noticed since birth. This swelling slowly progressed to involve the whole of the right lower limb accompanied by dilated veins over lateral aspect of the ankle. At six years of age, she developed clusters of small vesicles with warty appearance in the affected lower limb which ruptured spontaneously discharging serous fluid. Baseline hemogram, kidney and liver function tests were normal. Skin wedge biopsy performed was consistent with lymphangioma circumscriptum. Ultrasound doppler of gluteal region revealed dilated anechoic tortuous channels showing no flow within suggestive of lymphangioma. Ultrasonography of abdomen was normal. MR angiography of limb revealed extensive soft tissue hypertrophy involving right gluteal, thigh and upper leg