CARDIOVASCULAR FLASHLIGHT

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# Major left ventricular thrombi in an adolescent with COVID-19-associated inflammatory syndrome

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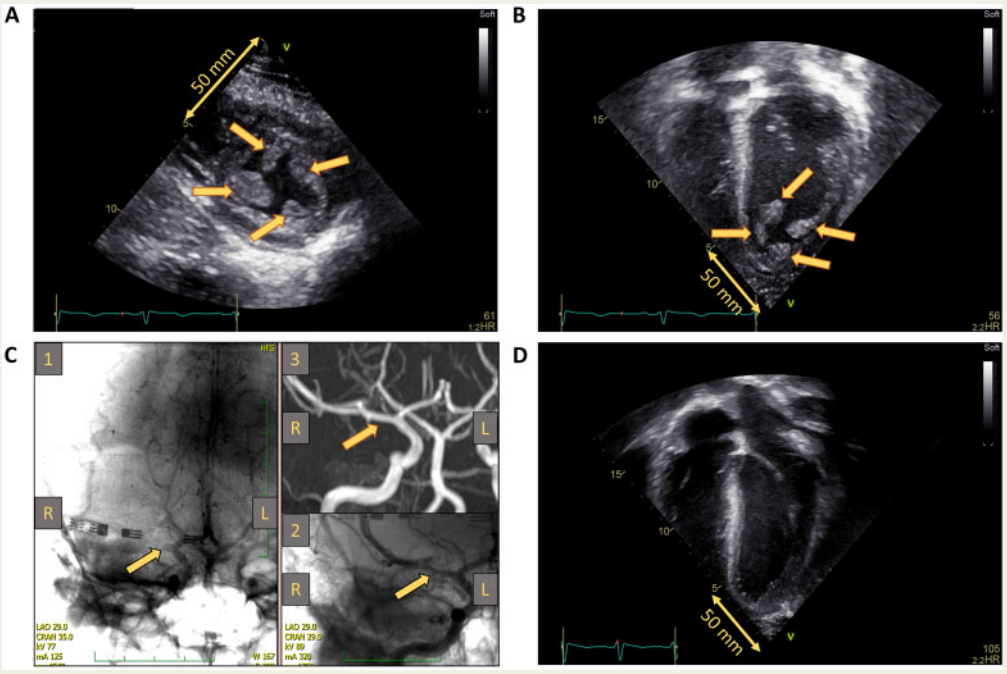


Seventeen-year-old boy with a recent history of mild course of COVID-19 (polymerase chain reaction positivity) was admitted to a regional hospital after 6 days of fever, diarrhoea, highly elevated C-reactive protein, fibrinogen, D-dimers, Troponin T, NT-proBNP, and SARS-COV-2 antibodies. Initial echocardiography showed impaired left ventricular (LV) function (ejection fraction 37%) without electrocardiographic signs of acute myocardial infarction. Inotropic support was started, intravenous immunoglobulins 2 g/kg, corticosteroids and preventive dose of nadroparin were administered. Echocardiography 42 h later showed normalization of the LV function and multiple thrombi in the LV apex. Heparin was started and the patient was transferred to our institution. At least four large mobile thrombi were detected (*Panels A* and *B*). Surgical extraction was considered high risk; therefore, Alteplase was administered in the cathlab after bilateral carotid filter insertion. Embolized thrombi were subsequently extracted from one filter and from the right femoral artery. On Day 4, residual thrombus embolized into the right medial cerebral artery followed by urgent interventional recanalization within 60 min (*Panel C*). Two more vascular surgical procedures for peripheral embolus extraction were required later. Echocardiography showed no residual LV thrombi (*Panel D*). The patient is in full contact and has partial paresis of left-sided limbs. There is no family history of thrombo-embolism; patient's current coagulation profile, platelets count and protein C and S levels are normal. Genetic testing for thrombophilia is negative. This is to our knowledge the first described case of LV thrombi in an adolescent associated with COVID-19-associated inflammatory syndrome without myocardial infarction.

*Panel A:* Short axis view showing thrombi in the apex of the left ventricle (arrows). *Panel B:* Four-chamber view showing thrombi in the apex of the left ventricle (arrows). *Panel C:* Angiography showing occlusion of the right medial cerebral artery (1). Recanalized right medial cerebral artery on angiography (2) and subsequent MRI (3). R, right; L, left. *Panel D:* Four-chamber view showing no residual thrombi in the left ventricle.

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**Conflict of interest:** The authors have submitted their declaration which can be found in the article Supplementary Material online.