

Images in CAD

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Spontaneous coronary artery dissection in a patient with COVID-19

John Papanikolaou^a, Abdulrahman Alharthy^a, Nikolaos Platogiannis^a, Abdullah Balhamar^a, Saleh A. Alqahtani^b, Ziad A. Memish^c and Dimitrios Karakitsos^{a,d}, ^aCritical Care Department, King Saud Medical City, Riyadh, Saudi Arabia, ^bDepartment of Medicine, The Johns Hopkins University Hospital, Baltimore, Maryland, USA, ^cResearch & Innovation Centre, King Saud Medical City, Riyadh, Saudi Arabia and ^dCritical Care Department, Keck School of Medicine, University of Southern California, Los Angeles, California, USA

Correspondence to John Papanikolaou, PhD, Critical Care Department, King Saud Medical City, PO Box 331905, Riyadh 11373, Saudi Arabia
Tel: +966 509816296; e-mail: y_papanikolaou@hotmail.com

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A 51-year-old female with a history of hypertension and tobacco use was admitted to our unit due to recent onset of fever (38.5°C), cough, and respiratory distress. SARS-CoV-2 infection was confirmed by real-time polymerase chain reaction (RT-PCR) assays performed on nasopharyngeal swabs. We administered oxygen via a high-flow-nasal-cannula, ribavirin/interferon beta-1b, low-dose dexamethasone, and prophylactic anticoagulation (enoxaparin 40 mg subcutaneously twice daily). On day-3, the patient developed precordial chest pain after intense cough. Electrocardiography revealed normal sinus rhythm and mild ST-segment elevation/biphasic T waves in precordial leads V2 and V3. Cardiac enzymes (including troponin-I <0.01 ng/ml) and echocardiography were inconclusive for myocardial ischemia. However, coronary angiography depicted a type-two (diffuse smooth stenosis) spontaneous coronary artery dissection (SCAD) at the distal left anterior descending (LAD) artery (Fig. 1a, Supplemental Video1, Supplemental digital content 1, <http://links.lww.com/MCA/A404>).

The patient had a single-vessel SCAD and no signs of refractory ischemia or hemodynamic instability. Hence, conservative treatment integrating dual antiplatelet, anticoagulation, and statin therapy was administered based on current recommendations [1]. Chest pain was relieved,

while no ischemic or other complications occurred. RT-PCR test for COVID-19 was negative on day-18, and the patient was discharged to home isolation. Coronary angiography after 1 month (Fig. 1b, Supplemental Video2, Supplemental digital content 2, <http://links.lww.com/MCA/A405>) showed restored LAD anatomy and patency.

Scarce data exist regarding the pathogenesis and treatment of SCAD in COVID-19 [2]. In our patient, no conditions associated with the development of SCAD (i.e., fibromuscular dysplasia, hormonal therapy, systemic inflammatory disease, or connective tissue disorder) were identified [1]. However, COVID-19-associated thromboinflammation might have been implicated in the pathobiology of SCAD [3]. In addition, the role of intense cough as a precipitating factor in the development of SCAD was clearly highlighted in our COVID-19 patient [1].

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Conflicts of interest

There are no conflicts of interest.

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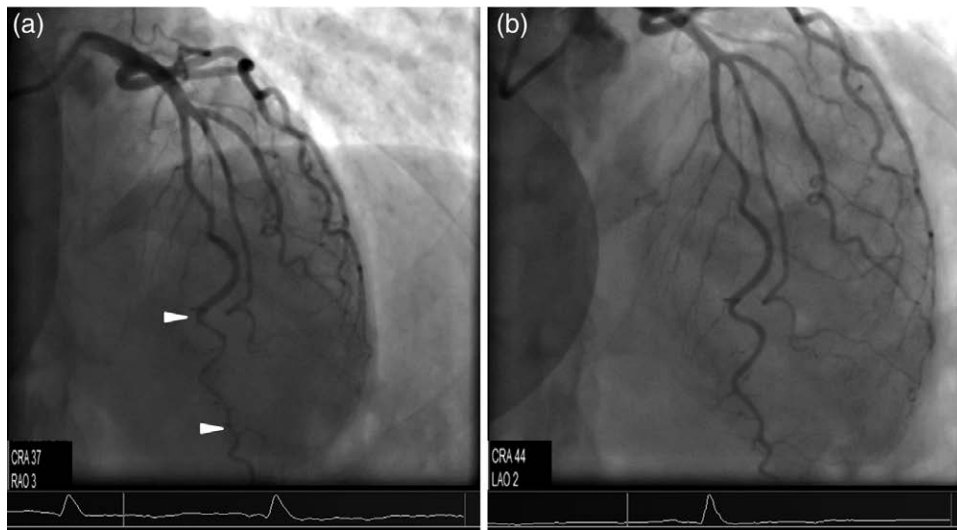
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Fig. 1



(a) A cranial (37°) coronary angiographic view illustrating a typical type-two coronary artery dissection at the distal left anterior descending artery (region between the two arrowheads). (b) Follow-up coronary angiography [projection approximately same to (a)] demonstrating total restoration of the patency of the affected vessel. CRA, cranial; LAO, left anterior oblique.