

Images in CAD

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Persistent stent thrombosis in a patient with non-ST-segment elevation myocardial infarction and mild COVID-19

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A 50-year-old morbidly obese female smoker on dual anti-platelet agents was admitted with the acute coronary syndrome. Two years ago, she underwent bare-metal stent implantation in the left anterior descending artery (LAD). Five months ago, she underwent coronary angiography due to unstable angina, which showed a 90% in-stent restenosis. The operator dilated it with a 4.5×18 mm noncompliant balloon (Mozec NC, Meril, India), and because of a dissection, he implanted a 3.0×19 mm sirolimus-eluting stent (BioMime, Meril, India) after the stent, overlapping it (Fig. 1 a and b). After the latter intervention, the patient was stable, but she developed exertional chest pain in the week prior to her admission. An electrocardiogram showed negative T waves in precordial leads. Initial laboratory examination revealed an elevated high troponin T of 95 pg/mL and normal C-reactive protein. Left coronary angiography showed a thrombosed lesion with 95% stenosis in the LAD stent, which was dilated with a 5×18 mm noncompliant balloon (Apollo, BrosMed Medical Co., China). Due to the flow-limiting heavy thrombus burden, thrombus aspiration with the thrombus aspiration catheter (Aspiron, Meril, India) was performed. Although the amount of thrombus decreased, it still persisted (Fig. c and d; Supplementary Video 1, Supplemental digital content 1, <http://links.lww.com/MCA/A482>). Tirofiban infusion (bolus 25 µg/kg, followed by 0.15 µg/kg/min) was initiated. Two days later, repeat coronary angiography showed thrombosis in the LAD stent, with a distal thrombolysis in myocardial infarction (TIMI)-III flow. An infusion of

abciximab was initiated (bolus 0.25 mg/kg, followed by 0.125 µg/kg/min). Nasopharyngeal swab for severe acute respiratory syndrome coronavirus 2 PCR was positive without typical COVID-19 symptoms and a chest CT showed no pneumonia. She received favipiravir (3200 mg oral loading dose, followed by 1200 mg/day) for 5 days and enoxaparin (10000 IU subcutaneous twice daily). One week later, a repeat coronary angiography revealed residual thrombosis in the LAD stent, with distal TIMI-III flow. Because she was stable, she was discharged with acetylsalicylic acid 81 mg and prasugrel 10 mg. The persistent thrombus in the LAD stent was also found in the fifth coronary angiogram (Fig. e and f; Supplementary Video2, Supplemental digital content 2, <http://links.lww.com/MCA/A483>).

In this case, we illustrated a very late stent thrombosis in a patient who also has COVID-19. It has been established that the risk of mortality and stent thrombosis in patients with ST-segment elevation myocardial infarction (STEMI) and COVID-19 after the percutaneous coronary intervention is increased in comparison to non-COVID-19 STEMI patients [1]. In a case series of stent thrombosis in the COVID-19 pandemic, the authors reported that three of four cases had COVID-19 pneumonia and very late stent thrombosis [2]. In this case, a distal TIMI-III flow was obtained with aggressive mechanical and pharmacological treatments, but the thrombus persisted. A thrombotic lesion despite aggressive antithrombotics may raise a suspicion of COVID-19 in the pandemic, even if the patient is asymptomatic.

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Conflicts of interest

There are no conflicts of interest.

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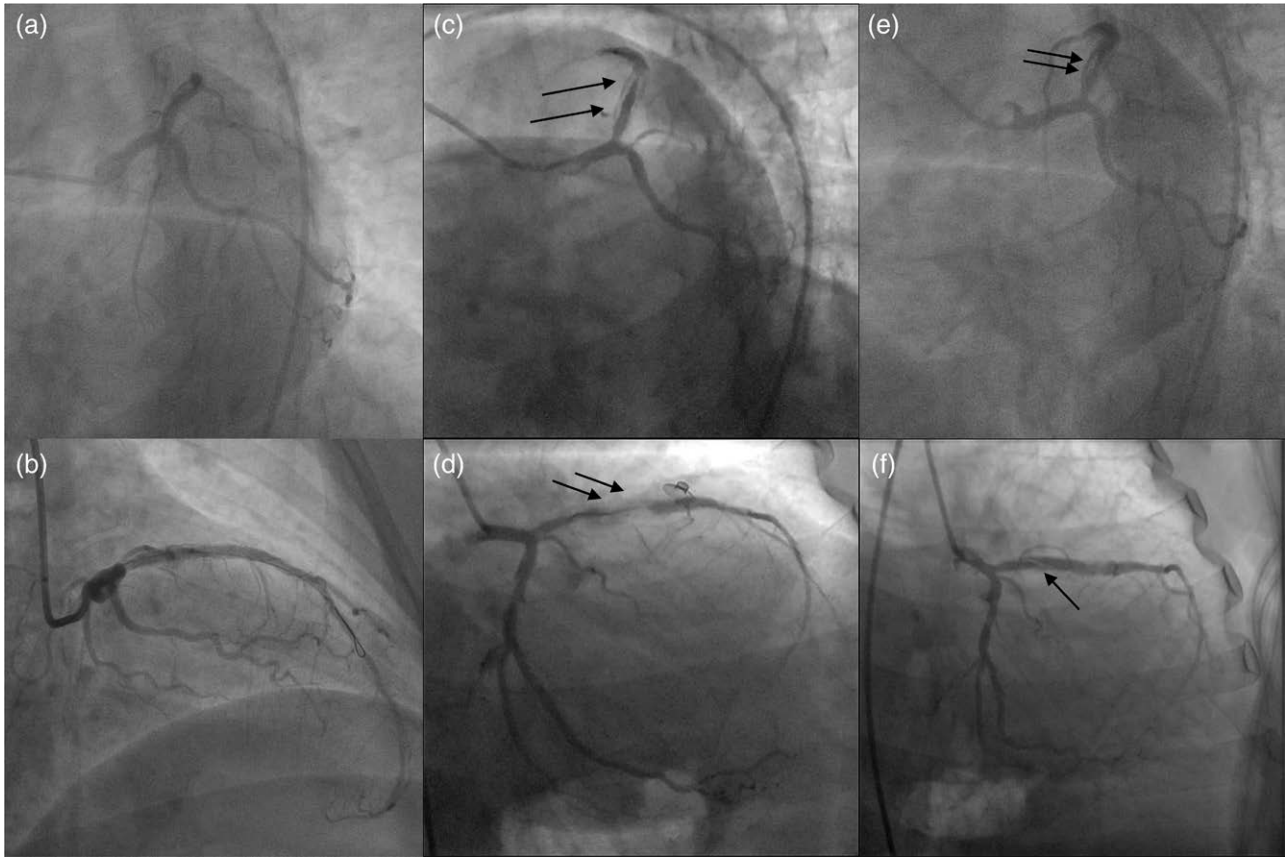
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Fig. 1



(a) Left coronary angiography 5 months ago demonstrates no thrombosis in the LAD stent. (b) Left coronary angiography shows distal TIMI-III flow in the LAD after dilatation with a noncompliant balloon and a sirolimus stent implantation. (c and d) Left coronary angiography during hospitalization for myocardial infarction shows a thrombotic lesion with 95% stenosis in the LAD stent (arrows). (e and f) Left coronary angiography after 2 months shows the residual thrombosis in the LAD stent with a distal TIMI-III flow (arrows). LAD, left anterior descending artery.