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## Image in cardiology

## Thrombus in the right atrium after COVID-19 pneumonia

## Trombo en la aurícula derecha tras neumonía por COVID-19

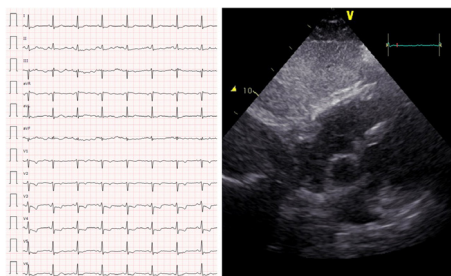
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Figure 1.



Figure 2.

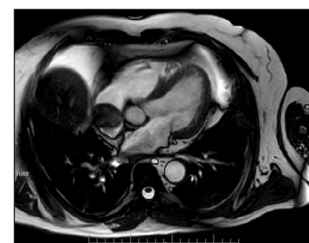


Figure 3.

A 70-year male, obese, hypertense, and dyslipidemic former smoker was admitted to hospital in November 2019 for chest pain following an electrocardiogram showing abnormal repolarization. Coronary angiography ruled out significant coronary lesions and echocardiography showed no relevant abnormalities (figure 1). Microvascular angina was suspected and the patient was discharged with outpatient cardiac magnetic resonance study pending.

In March 2020, he was admitted with bilateral pneumonia caused by COVID-19 (figure 2), with a favorable outcome. He received treatment with hydroxychloroquine, lopinavir/ritonavir, amoxicillin-clavulanic acid, methylprednisolone, and tocilizumab. The D-dimer peak was 895  $\mu\text{g/L}$  (normal value < 250  $\mu\text{g/L}$ ). During hospitalization and the first 2 weeks after discharge, he received thromboembolism prophylaxis with bempiparin.

In May 2020, cardiac magnetic resonance imaging was performed. This showed normal biventricular function and lateral ischemia. As an incidental finding, a mass was observed in the right atrium measuring 3  $\times$  3 cm, with smooth margins, adhered to the atrial roof without spread to the venae cavae or contrast uptake, consistent with intracavitary thrombus (figure 3 and video 1 of the supplementary data).

Oral anticoagulation with dicoumarin agents was initiated. Currently, the patient remains asymptomatic with strict clinical and echocardiographic follow-up.

An increased incidence of thrombotic events has been reported in patients with COVID-19 infection, and pulmonary thromboembolism is one of the most important causes of clinical deterioration. We found a large thrombus in the right atrium after pneumonia caused by COVID-19 in an asymptomatic patient in sinus rhythm with normal biventricular function. This thrombus had not been present months earlier. Cardioembolic events could be one of the causative mechanisms of pulmonary embolism in patients with COVID-19 infection.

## APPENDIX. SUPPLEMENTARY DATA

Supplementary data associated with this article can be found in the online version available at <https://doi.org/10.1016/j.rec.2020.06.023>

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