

Right atrial thrombus in a patient after COVID-19 pneumonia

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Background: Significant coagulopathy and hyperinflammation are found in patients with coronavirus disease 2019 (COVID-19).

Case report: 44-year-old male patient was admitted to the Infective Clinic with a severe form of pneumonia COVID-19. The disease is complicated, with sub-segmental embolization of the lungs and pneumothorax, which are confirmed with laboratory and computed tomography (CT) lung with angiography. On the third day of hospitalization, an echocardiogram is performed, which shows global hypocontractility of the left ventricular walls with a reduced ejection fraction EF 45%. The right ventricle was borderline. After the applied therapy, the patient's condition improves and he is discharged home with anticoagulant therapy. An echocardiography (**Figure 1**) performed as part of a cardiology examination one month after discharge from the hospital diagnosed a mass in the right atrium (35x27mm), which could correspond to a thrombus. Calcifications were visualized in the mass. The patient is read-

mitted to the Cardiology Clinic and intravenous heparin is indicated. Perform transesophageal echocardiography (**Figure 2**) and confirm the presence of a mass consistent with thrombus. Cardiac CT (**Figure 3**) shows mass in right atrium extending into the inferior vena cava, and CT of the abdomen shows thrombosis of the inferior vena cava. Cardiac magnetic resonance (**Figure 4**) showed a mass in the right atrium, which corresponds to a thrombus adherent to the interatrial septum. After application of contrast, focal zones of higher intensity are visualized, zones of fibrosis on interventricular septum, anterior and inferior and lateral wall of subepicardial and intramyocardial localization, which correspond to the sequelae of the inflammatory process, with ejection fraction 45%. The right ventricle has normal dimensions. After unsuccessful therapy with unfractionated heparin, the thrombus was successfully surgically extracted.

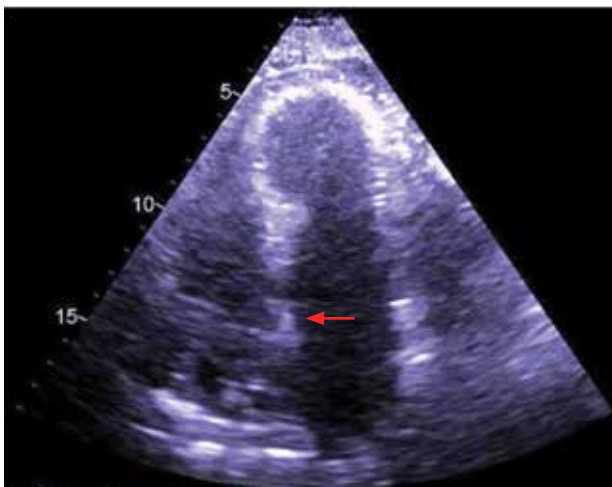


FIGURE 1. Two-dimensional echocardiogram apical 4-chamber view showing a mass in the right atrium.



FIGURE 2. Transesophageal echocardiography showing a mass in the right atrium.

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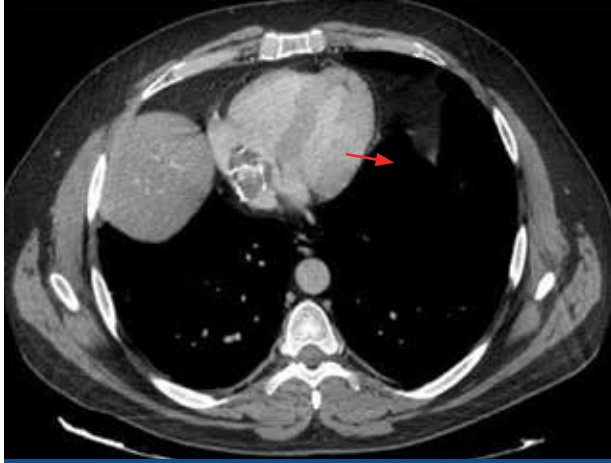


FIGURE 3. Cardiac computed tomography confirmed mass (thrombus) in the right atrium extending into the inferior vena cava.

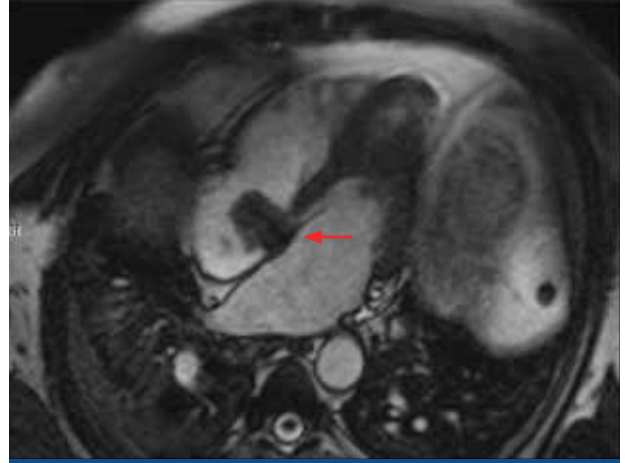


FIGURE 4. Cardiac magnetic resonance showed a mass in the right atrium, which corresponded to a thrombus adherent to the interatrial septum.

Conclusions: Cardiac imaging modalities, including transthoracic or transesophageal echocardiography, cardiac magnetic resonance, cardiac computed tomography, and ^{18}F fluorodeoxyglucose positron emission tomography have a complementary and reinforcing role for the evaluation of cardiac masses.