Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Essential image/*Chest imaging*

Acute pulmonary embolism in a patient with COVID-19 pneumonia

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An overweight 60-year-old man presented with fever that started ten days ago. At admission, ear temperature was 38.5 °C and oxygen saturation was 99%. Laboratory tests showed normal white blood cell count (5.000 per μL), elevated serum lactate level (100 U/L) and elevated reactive C protein level (27 mg/dL). Severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2; formerly called 2019-nCoV) was detected in a throat swab sample by reverse transcription polymerase chain reaction on day 2. On day 3, the patients developed dyspnea and oxygen saturation dropped to 90%. D-dimer levels were increased (5411 ng/mL).

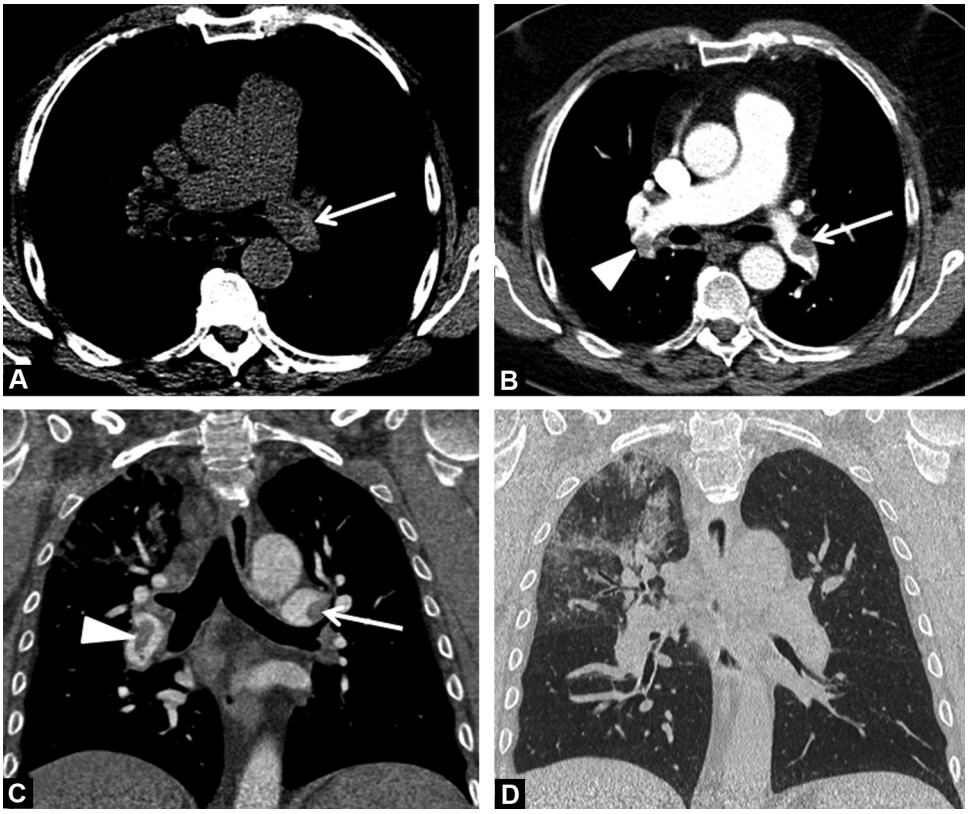

Fig. 1. 60-year-old man with COVID-19 pneumonia and acute pulmonary embolism. A. Unenhanced CT image in the axial plane (mediastinal window: W 410/L 10 HU) shows spontaneously hyperattenuating clot (arrow) in the left main pulmonary artery. B. CT image in the axial plane (mediastinal window: W 410/L 10 HU) obtained after intravenous administration of iodinated contrast material confirms thrombus in the left main pulmonary artery (arrow) and reveals contralateral thrombus in the right interlobar artery(arrowhead). C. CT image in the coronal plane (mediastinal window: W 410/L 10 HU) depicts filling defects in the left main pulmonary artery (arrow) and right interlobar artery (arrowhead). D. CT image in the coronal plane (lung window: W 1600/L–500 HU) shows diffuse involvement of upper right lobe by ground-glass opacities, interlobular septal thickening, peribronchovascular consolidations and perihilar bronchial wall thickening.

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Computed tomography revealed acute bilateral pulmonary embolism and findings consistent with COVID-19 pneumonia (Fig. 1). COVID-19 belongs to the family of betacoronavirus and shares similar imaging and clinical features with SARS and Middle East respiratory syndrome coronavirus (MERS); however, no cases of acute pulmonary embolism have been reported in MERS and only one in severe acute respiratory syndrome. [1]. Elevated D-dimer values are common in COVID-19 patients, even in the absence of thrombophlebitis and acute pulmonary embolism [1]. Our observation highlights the fact that in patients with COVID-19 pneumonia presenting with worsening of clinical respiratory symptoms, chest CT angiography should be performed to detect superimposed acute pulmonary embolism. All clinicians involved in this emergency should be aware of this issue.

Author contributions

All authors attest that they meet the current International Committee of Medical Journal Editors (ICMJE) criteria for Authorship.

Disclosure of interest

The authors declare that they have no competing interest.

Reference

[1] Chen J, Wang X, Zhang S, et al. Findings of acute pulmonary embolism in COVID-19 patients. Lancet Infect Dis 2020, http://dx.doi.org/10.2139/ssrn.3548771.