

## CARDIOVASCULAR FLASHLIGHT

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**Acute pulmonary embolism and COVID-19 pneumonia: a random association?**Gian Battista Danzi <sup>1\*</sup>, Marco Loffi <sup>1</sup>, Gianluca Galeazzi <sup>1</sup>, and Elisa Gherbesi <sup>2</sup><sup>1</sup>Division of Cardiology, Ospedale di Cremona, Cremona, Italy; and <sup>2</sup> Università degli Studi di Milano, Milano, Italy

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In a 75-year-old Covid-19-positive woman hospitalized for severe bilateral pneumonia, CT scan documented bilateral pulmonary embolism associated with extensive ground-glass opacifications involving both the lung parenchymas.

Acute infections are associated with a transient increased risk of venous thrombo-embolic events. A COVID-19-positive 75-year-old woman, with severe bilateral pneumonia and concomitant acute pulmonary embolism, was hospitalized after 10 days of fever and a recent onset of dyspnoea. She was haemodynamically stable and without strong predisposing risk factors for venous thrombo-embolism. The baseline ECG was normal.

A modest leucocytosis was present ( $11.360/\text{mm}^2$ ) with increased values of C-reactive protein (180 mg/L), troponin I (3240.4 ng/mL), and D-dimer (21  $\mu\text{g}/\text{mL}$ ). While on oxygen, arterial blood gas revealed a  $\text{PaO}_2$  of 78.0 mmHg with a  $\text{PcO}_2$  of 25.1 mmHg and an  $\text{sO}_2$  of 95.6%. A right basal infiltrate was evident at the chest X-ray, while echocardiographic evaluation showed a dilated and severely hypokinetic right ventricle with a mean derived pulmonary arterial pressure of 60 mmHg. CT scan documented the presence of a bilateral filling defect diagnostic for pulmonary embolism (Panels 1A and B; [Supplementary material online Video 1](#)), associated with extensive ground-glass opacifications involving both the lung parenchymas with predominant consolidation in the posterior basal segment of the left lower lobe (Panels 1C and D; [Supplementary material online Video 2](#)). Lower-limb compression ultrasonography was negative. Based on these findings, treatment with low molecular weight heparin, lopinavir/ritonavir, and hydroxychloroquine was started.

In conclusion, the absence of major predisposing factors in this case of diffuse bilateral COVID-19 pneumonia seems to confirm the role of severe infections as a precipitant factor for acute venous thrombo-embolism and the causal relationship.

[Supplementary material](#) is available at *European Heart Journal* online.

