

## Images in Clinical Tropical Medicine

### Peripheral “Swiss Cheese” Appearance in a COVID-19 Patient with Chronic Obstructive Pulmonary Disease

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A 78-year-old Japanese man with a history of right upper lobectomy due to lung abscess was transferred to our emergency department for dyspnea. The patient experienced progressive episodes of exertional dyspnea over a two-year period because of underlying chronic obstructive pulmonary disease (COPD), which was unmanaged. The patient was a former smoker. He smoked 40 cigarettes per day for 28 years. On the day before admission, he experienced a significantly worse episode of dyspnea triggering his decision to visit a local clinic. On arrival, he presented with the following: body temperature, 37.3°C; respiratory rate, 30/minute; and oxygen saturation, 74% (room air). A chest X-ray (Figure 1) revealed bilateral opacities peripherally. Chest computed tomography (CT) (Figure 2) revealed diffuse low attenuation areas and increased concentrations along the

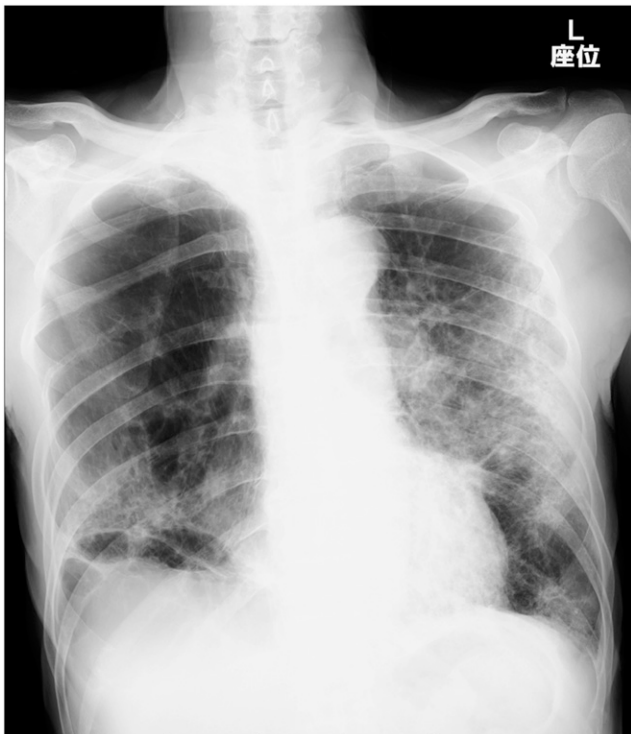


FIGURE 1. Chest X-ray. A chest X-ray revealed bilateral opacities peripherally.

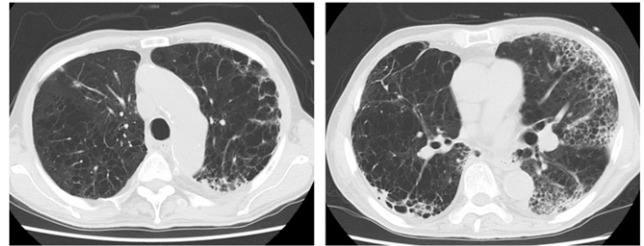


FIGURE 2. Computed tomography (CT) of the lung. Chest CT revealed diffuse low attenuation areas and increased concentrations along the circumference of the emphysema in a peripheral, bilateral, posterior, and lower lung zone distribution.

circumference of the emphysema. Three weeks before admission, his wife was hospitalized because of COVID-19. A reverse transcription–polymerase chain reaction test for SARS-CoV-2 was positive.

Chest CT findings related to COVID-19 typically present with ground-glass opacities with or without consolidation in a peripheral, bilateral, posterior, and diffuse or lower lung zone distribution. Ground-glass opacities have also been reported to have round morphology or a “crazy paving” pattern.<sup>1</sup> However, the combination of COVID-19 pneumonia and advanced structural lung damage caused by COPD can culminate in atypical CT findings such as a peripheral “Swiss cheese” appearance.<sup>2</sup> The peripheral distribution of “Swiss cheese” appearances may denote COVID-19 pneumonia in patients with underlying COPD and could be exploited for use in its diagnosis.

Received June 6, 2020. Accepted for publication June 8, 2020.

Published online June 12, 2020.

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