Radiology

Images in Radiology

3D CT of Novel Coronavirus (COVID-19) Pneumonia

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A 38-year-old man presented with complaints of fever, shortness of breath, dry cough, and anosmia for 3 days. The patient had complaints of pleuritic chest pain of several hours duration. Physical examination revealed crackles on lung auscultation, and forehead temperature was 38.6° Celsius. Routine laboratory values were mostly within normal limits, with the exception of C-reactive protein level (51.4 mg/L; normal level, < 5 mg/L) and erythrocyte sedimentation rate (28 mm/h; normal level, 0-15 mm/h). The patient underwent unenhanced chest CT with a preliminary diagnosis of pneumonia.

Chest CT images (Figs 1 and 2) showed peripheral, multilobar areas of ground-glass opacity sign suggesting diagnosis of novel coronavirus (COVID-19) pneumonia (Fig 2). Nasopharyngeal swab obtained 2 hours after CT was positive for COVID-19 with real-time polymerase chain reaction (RT-PCR), and the diagnosis of COVID-19 pneumonia was confirmed. The patient was treated with oxygen inhalation, hydroxychloroquine, oseltamivir, and lopinavir/ritonavir. On day 6 of hospitalization, the patient's body temperature returned to normal, and clinical symptoms improved. Common CT features are peripheral, bilateral, multilobar, and basal predominant distributed consolidation and/or ground-glass opacities, as in the present case (1).

Reference

1. Chung M, Bernheim A, Mei X, et al. CT Imaging Features of 2019 Novel Coronavirus (2019-nCoV). Radiology 2020;295(1):202-207.

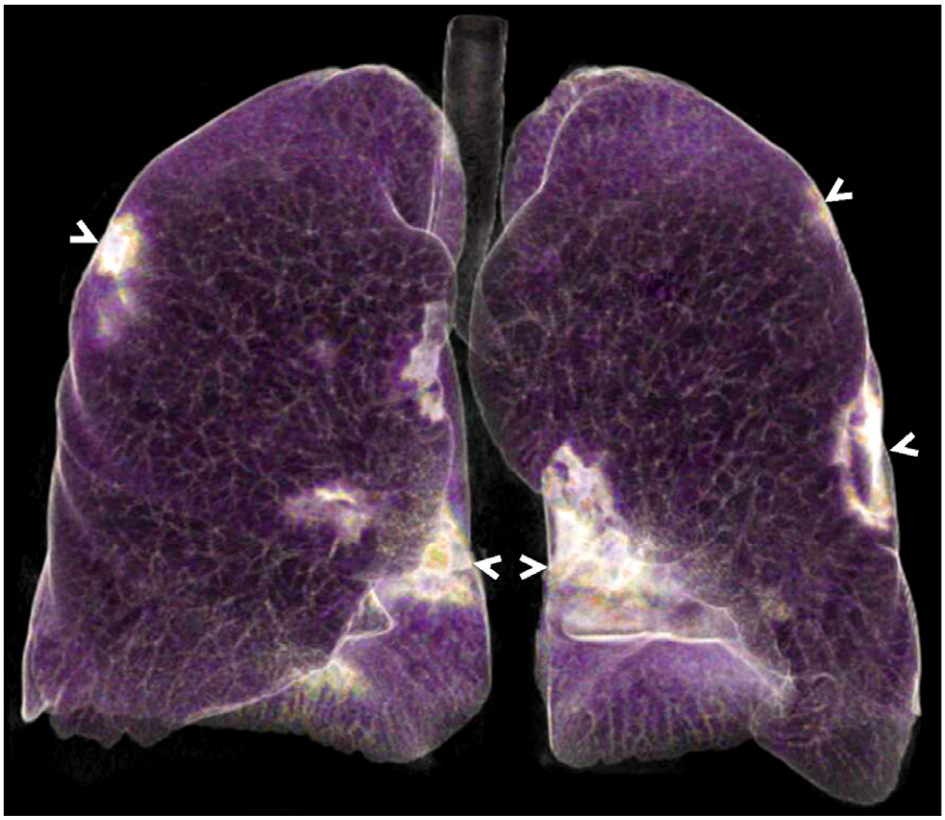

Figure 1: Volume-rendered three-dimensional reconstruction chest CT image (IntelliSpace Portal 9.0; Philips Medical Systems, Best, the Netherlands) shows peripheral ground-glass opacities in both lungs (arrowheads). See also the three-dimensional Movie (online).

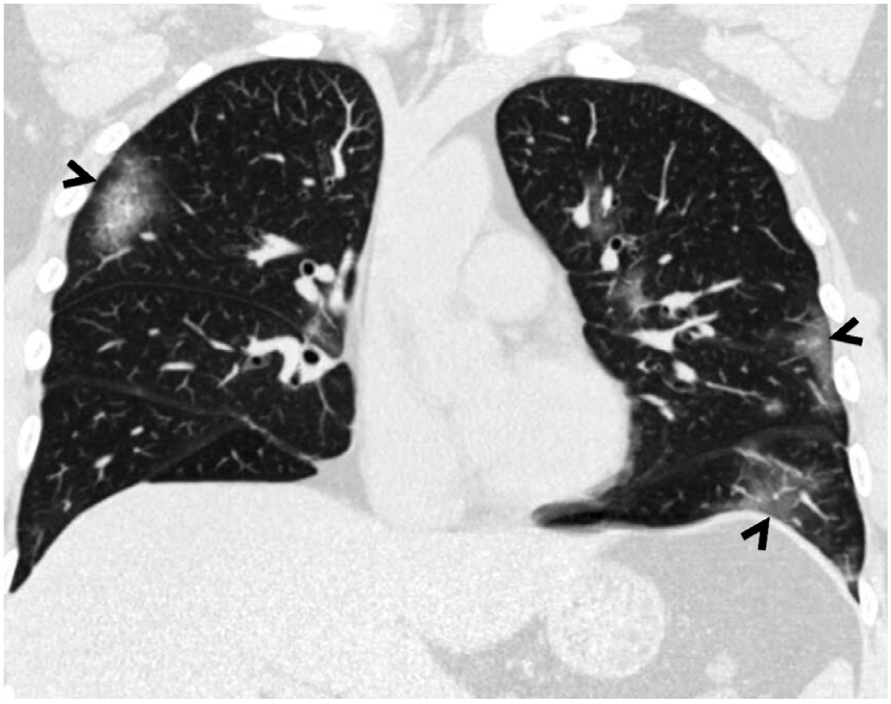

Figure 2: Coronal reconstruction chest CT image shows ill-defined peripheral ground-glass opacities in both lungs (arrowheads).