

Use of Chest CT in Combination with Negative RT-PCR Assay for the 2019 Novel Coronavirus but High Clinical Suspicion

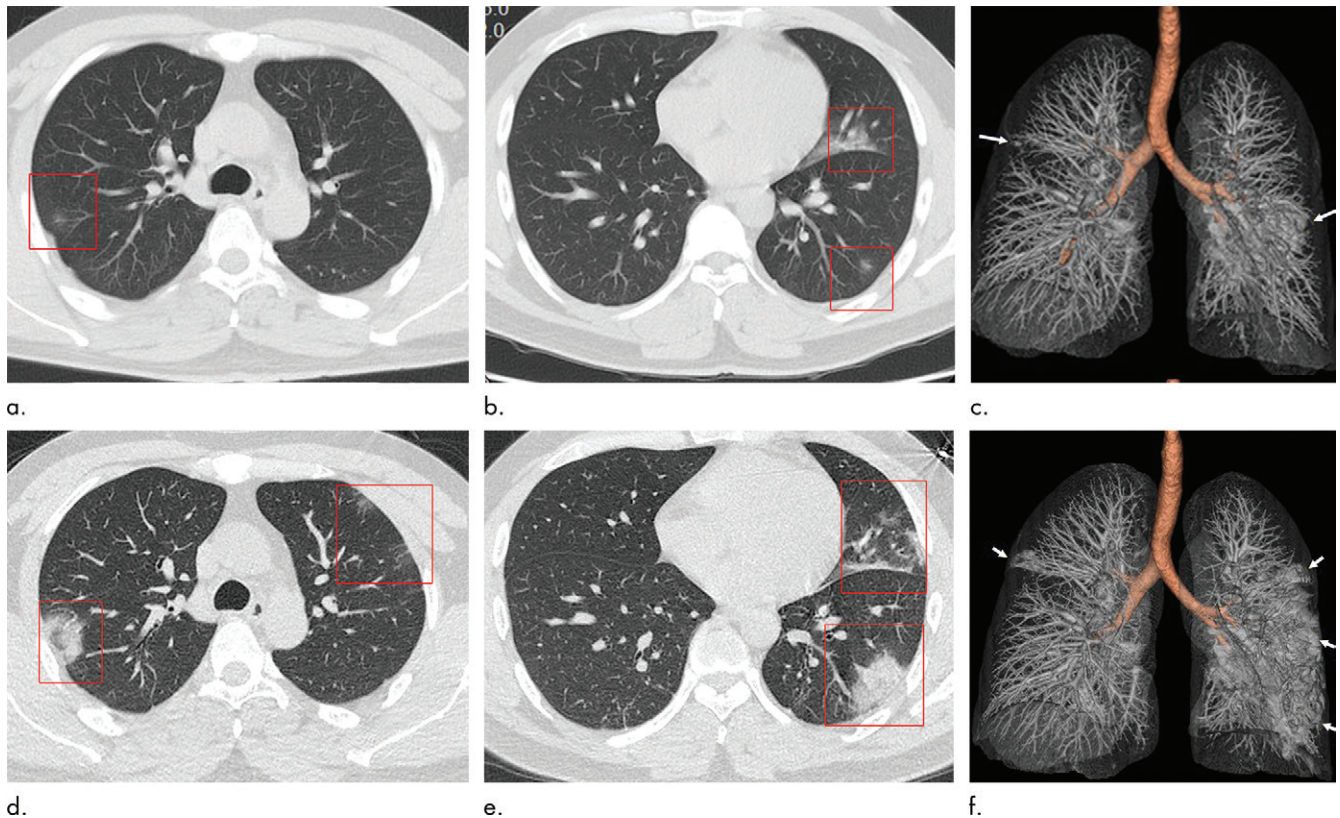
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Conflicts of interest are listed at the end of this article.

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Images in a 36-year-old man with a 2-day history of fever, sore throat, and fatigue 5 days after visiting Wuhan, China, and a negative sputum real-time fluorescence polymerase chain reaction assay for the 2019 novel coronavirus. **(a, b)** Chest CT scans obtained at presentation show ground-glass opacities (red box) in the right upper lobe and the lingular segment and left lower lobe **(b)**. **(c)** Volume rendering of chest CT scan obtained at admission. **(d, e)** CT scans obtained 3 days after admission show progression of ground-glass opacities to an atoll sign in the right upper lobe (red box in **d**) and left lower lobe consolidation (red boxes in **e**). **(f)** Volume rendering of chest CT scan obtained 3 days after admission shows the new areas of consolidation.

A 36-year-old man presented to the hospital with a 2-day history of fever, sore throat, and fatigue 5 days after visiting Wuhan, China. His temperature on admission was 37.8°C (100.04°F). Pulmonary auscultation was normal. Laboratory studies showed a normal white blood cell count ($4.6 \times 10^9/L$) with a differential count of 53.1% neutrophils. The blood procalcitonin level was normal. Chest CT showed multiple peripheral ground-glass opacities in both lungs with more involvement of the left upper lobe, lingular segment (Figure a–c). At admission, the real-time fluorescence polymerase chain reaction (RT-PCR) assay of the sputum was negative for the 2019 novel coronavirus (2019-nCoV) nucleic acid.

Repeat CT chest performed 3 days after admission showed transformation of ground-glass opacities to more consolidation (Figure d–f). A repeat RT-PCR 2019-nCoV

nucleic acid assay was also negative at this time. Six days after admission, the third RT-PCR 2019-nCoV nucleic acid assay was finally found to be positive.

When specimen tests are negative, the possibility of a false-negative result should be considered in the context of a patient's recent exposures and the presence of clinical signs and symptoms consistent with 2019-nCoV infection (1,2). In this case, chest CT findings were typical of findings for 2019-nCoV pneumonia (3) coupled with recent exposure suggesting that 2019-nCoV infection was likely.

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