

Letters to the Editor

Patients with RT-PCR-confirmed COVID-19 and Normal Chest CT

From

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Editor:

We read with great interest the recently published articles on Coronavirus Disease 2019 (COVID-19) in *Radiology*. Thanks to the journal for the rapid and efficient efforts, which is helping medical staff members and radiologists around the world improve their understanding of this disease.

CT can play a vital role in the early detection and management of COVID-19 (1,2). However, it is worth emphasizing that a patient with reverse-transcription polymerase chain reaction (RT-PCR)-confirmed COVID-19 infection may have normal chest CT at admission. Bernheim et al (3) reported 20 (56%) of 36 patients imaged 0–2 days after symptom onset had normal CT. Fang et al (4) reported one of 51 (2%) patient imaged 3 days \pm 3 after symptom onset with normal CT. Ai et al reported (5) 21 of 601 (3%) RT-PCR-positive patients with clinical symptoms had normal CT scans.

In contrast, Pan et al (6) reported four of 21 (19%) patients with first normal CT had lung abnormalities on the follow-up CT approximately 4 days later. In our experience (7), among 17 of 149 (11.4%) symptomatic patients with normal chest CT on admission, 12 remained negative 10 days later with two to three follow-up CT examinations and the chest CT of the other five patients became positive over an average of 7 days. These reports confirm that a normal chest CT scan cannot exclude the diagnosis of COVID-19, especially for patients with early onset of symptoms.

At present, RT-PCR test remains the reference standard to make a definitive diagnosis of COVID-19 infection despite the false-negative rate. In the fifth edition of the Diagnosis and Treatment Program of 2019 New Coronavirus

Pneumonia proposed by The National Health Commission of China (8), chest CT findings were included as evidence of clinical diagnosis of COVID-19 for patients in Hubei province. However, chest CT findings were removed from diagnostic criteria in the most recently published sixth version (9). The final etiology diagnosis of COVID-19 should be confirmed by positive RT-PCR or gene sequencing.

The early diagnosis of COVID-19 is critical for prevention and control of this pandemic. Clinicians should be vigilant at all times to identify patients with COVID-19 infection, who may have few or no clinical symptoms, normal chest CT, and or even initial negative PR-PCT test.

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