

Letter to the Editor

## **Patients with RT-PCR Confirmed COVID-19 and Normal Chest CT**

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Dear editor:

We read with great interest the recent published papers on Coronavirus Disease 2019 (COVID-19) in *Radiology*. Thanks to the journal for the rapid and efficient efforts, which are 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 findings at admission. Bernheim et al (3) reported 20 (56%) of 36 patients imaged 0–2 days after symptom onset had normal CT findings. Fang et al (4) reported one of 51 (2%) patient imaged 3±3 days after symptom onset with normal CT scans. Ai et al (5) reported 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), of 17 of 149 (11.4%) symptomatic patients with normal chest CT on admission, 12 remained negative 10 days later with 2–3 follow-up CT examinations; the chest CT scans 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 diagnose of COVID-19 infection despite the false-negative rate. On 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 diagnosis of COVID-19 should be confirmed by positive RT-PCR test 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 findings, and/or even initial negative PR-PCT test.

## Reference

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