Letter to the Editor

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Key Considerations for Radiologists When Diagnosing the Novel Coronavirus Disease (COVID-19)

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Dear Editor,

We have read the publication titled "Chest Radiographic and CT Findings of the 2019 Novel Coronavirus Disease (COVID-19): Analysis of Nine Patients Treated in Korea" with great interest (1). The study suggested that the typical computed tomography (CT) features of COVID-19 pneumonia were ill-defined pure ground-glass opacities (GGO) or mixed GGO and consolidation. The statistical analysis revealed that there was a significant difference in the distribution of lesions ($p < 0.05$) (1). We would like to share our opinion regarding diagnosing COVID-19 using radiological findings. Firstly, even though there are some typical radiological features of COVID-19 pneumonia, these features are not specific signs for different kinds of virus-related pneumonia or COVID-19 infection stages (2, 3). CT is a useful tool for the surveillance of pneumonic lesions and is more likely to detect early and/or mild lesions in the virus lifecycle (2, 4). Therefore, CT examinations play an important role in detecting or monitoring pulmonary parenchyma in patients suspected with COVID-19 pneumonia. Secondly, not all patients with COVID-19 have abnormal CT features (5). The real-time reverse transcriptase-polymerase chain reaction amplification of the viral DNA is considered the "gold standard". Therefore, a CT examination and nuclear acid test should be used together for detecting COVID-19. Thirdly, fever and cough have been the most frequent initial symptoms (3), and radiologists should pay attention to these chief symptoms. Lastly, the history of exposure to other patients with COVID-19 or the epidemic area is critical to know. In conclusion, radiologists should make a comprehensive analysis when diagnosing COVID-19 infection that is beyond just assessing the radiological features.

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Response

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To the Editor,

We are grateful for you sharing your opinion regarding our publication. We agree that computed tomography (CT) is an important imaging modality for managing pneumonia related to the 2019 novel coronavirus disease (COVID-19). Early investigations, primarily based on CT images, expanded the understanding of radiologic manifestations and the temporal evolution of COVID-19 pneumonia (1-3). Nevertheless, unless COVID-19 is highly prevalent in an area, similar to Wuhan, we believe that chest CT should not be recommended as a primary surveillance tool in Korea. This is because the degree of incremental diagnostic yield of adding chest CT to reverse transcriptase-polymerase chain reaction was not sufficiently validated in a low-prevalence setting. Furthermore, the introduction of routine chest CT scanning requires extra resources, strict preventative measures against transmission, and increases the patient's radiation exposure. It is well-known that 15% to 20% of patients with coronavirus pneumonia have normal CT findings by referring to cases of Severe Acute Respiratory Syndrome and Middle East Respiratory Syndrome (4). Examining the presence and duration of patient symptoms, including fever and cough, is important when interpreting chest radiographic and CT examinations in suspected COVID-19 cases. Nevertheless, around 50% of patients with COVID-19 do not have a fever at admission (5). The history of exposure is fundamental for making accurate COVID-19 pneumonia diagnoses, particularly for active case finding during the early phase of the outbreak, which requires collaborative image interpretation by clinicians and radiologists.

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