Commentary

A commentary on "Diagnosis and treatment of coronavirus disease 2019 (COVID-19): Laboratory, PCR, and chest CT imaging findings" [Int. J. Surg. 2020; 79:143–153]

Since December 1, 2019, a cluster of pneumonia of unknown etiology, now known as coronavirus disease-2019 (COVID-19), has been reported in Wuhan, Hubei province, China [1]. The disease has developed a severe pandemic affecting over 200 countries, areas or territories. Without a therapeutic vaccine or specific antiviral drugs, early detection and isolation becomes essential against novel coronavirus. We read with great interest the publication by Abbasi-Oshaghi and colleagues [2], "Diagnosis and treatment of coronavirus disease 2019 (COVID-19): Laboratory, PCR, and chest CT imaging findings". This review focuses on currently available information on the etiology, clinical symptoms, diagnosis, and mechanism of action of COVID-19. We would like to share our opinion on this valuable work.

In our experience, some patients with likely COVID-19 infection may have initial negative reverse transcriptase (RT) polymerase chain reaction (PCR) results. Reasons for false negative RT-PCR may include insufficient cellular material for detection and improper extraction of nucleic acid from clinical materials. Asymptomatic cases with COVID-19 are of great concern. They contribute to the spread of COVID-19, with similar transmission rates as symptomatic patients, while the virus replicates in their lower respiratory tract resulting in radiological evidence of infection. Reports show that asymptomatic cases with normal chest CT have shorter periods from diagnosis to being COVID-19 negative than asymptomatic cases with positive chest CT [3,4]. COVID-19 should be considered among cases with CT abnormalities even when there are no other symptoms.

The CT imaging of COVID-19 infection should be differentiated with other virus pneumonias, such as influenza virus, parainfluenza virus, respiratory syncytial virus, and adenovirus. Adenovirus pneumonia lesions had higher density, more consolidations, and fewer subpleural lesions. Respiratory syncytial virus and parainfluenza virus pneumonia lesions were mostly distributed along the bronchial tree with a thickened bronchial wall. Influenza viruses could cause grid-like changes in the lungs. In addition, it should be differentiated from bacterial pneumonia, mycoplasma pneumonia, and chlamydia pneumonia, and the density of pneumonia lesions caused by the latter pathogens is relatively higher. However, chest CT manifestations of pneumonia caused by different pathogens overlap, and COVID-19 pneumonia can be superimposed with pneumonia caused by other types of pathogens, presenting more serious and complex imaging manifestations, so epidemiological and etiological examination should be combined.

In summary, clinicians should consider COVID-19 in cases with positive chest CT findings, even without clinical symptoms. However, the diagnosis of COVID-19 pneumonia by CT imaging alone is not sufficient enough, especially in the case of coinfection with other pathogens. Therefore, early chest CT screening and timely follow-up, combined with corresponding pathogen detection, is a feasible clinical protocol. On the other hand, the exact place of chest CT is for staging the COVID-19 disease as mild, moderate, and severe, instead of being a screening tool.

Ethical approval

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Author contribution

Guosheng Huang: Writing - original draft, **Dawei Zheng**: Language edition.

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N.A.

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Dawei Zheng.

Declaration of competing interest

The authors declare that they have no conflict of interest.

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