



Letters to the Editor

Chest CT in “Post” COVID-19: What the Radiologist Must Know

From:

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Editor:

We read with great interest the article “Chest CT in COVID-19: What the Radiologist Needs to Know” by Kwee and Kwee in the November-December 2020 issue of *RadioGraphics* (1). We applaud the authors for very comprehensively reviewing almost all the facets of chest CT imaging in COVID-19.

However, we have a few observations and comments to make. The authors have not discussed the important role of chest CT in the postrecovery phase of COVID-19. Although there is a paucity of literature on this topic, it is not uncommon to have patients presenting with long-term respiratory consequences like breathlessness and/or hypoxia and deranged pulmonary function test (PFT) results. Chest CT is needed in such patients to rule out fibrotic lung disease, which is a known sequel of COVID-19 infection (2). Its incidence is likely to increase in the coming days as the number of active cases is also increasing with new waves of infection being reported in many countries, and it may have a significant long-term socioeconomic impact (3). In a recent study of 55 COVID-19 survivors, Zhao et al (4) have described radiologic abnormalities in 39 patients 3 months after hospital discharge. Ground-glass opacities, interstitial thickening, and crazy-paving patterns were found at follow-up imaging in these patients, and PFT results were abnormal in 12 of these 39 patients. In another study, Mo et al (5) have documented abnormal PFT results in COVID-19-recovered patients at the time of their discharge. They noted that impairment of diffusion capacity was

increased in patients who had severe pneumonia. Fibrosis has also been more commonly seen in patients with severe symptoms and a higher level of inflammatory markers, including interleukin-6 and C-reactive protein. Interstitial thickening, coarse reticular pattern, irregular interfaces, and parenchymal bands seen at CT during the acute phase of the disease may be indicators of impending pulmonary fibrosis and need to be evaluated carefully (6). This vulnerable patient population group needs multidisciplinary care with a comprehensive assessment of radiographic and physiologic pulmonary abnormalities. Nevertheless, more long-term follow-up studies are needed to further elucidate the role of chest CT in this subset of patients.

References

1. Kwee TC, Kwee RM. Chest CT in COVID-19: what the radiologist needs to know. *RadioGraphics* 2020;40(7):1848–1865.
2. Grillo F, Barisione E, Ball L, Mastracci L, Fiocca R. Lung fibrosis: an undervalued finding in COVID-19 pathological series. *Lancet Infect Dis* 2020. 10.1016/S1473-3099(20)30582-X. Published online July 28, 2020.
3. George PM, Wells AU, Jenkins RG. Pulmonary fibrosis and COVID-19: the potential role for antifibrotic therapy. *Lancet Respir Med* 2020;8(8):807–815.
4. Zhao YM, Shang YM, Song WB, et al. Follow-up study of the pulmonary function and related physiological characteristics of COVID-19 survivors three months after recovery. *EClinicalMedicine* 2020;25:100463.
5. Mo X, Jian W, Su Z, et al. Abnormal pulmonary function in COVID-19 patients at time of hospital discharge. *Eur Respir J* 2020;55(6):2001217.
6. Yu M, Liu Y, Xu D, Zhang R, Lan L, Xu H. Prediction of the development of pulmonary fibrosis using serial thin-section CT and clinical features in patients discharged after treatment for COVID-19 pneumonia. *Korean J Radiol* 2020;21(6):746–755.

Drs Kwee and Kwee respond:

We thank Dr Prabhakar and colleagues from India for reading our article and for providing some references to selected literature on lung fibrosis in COVID-19, which were not yet available at the time our article was composed. They postulate that chest CT has an important role in the postrecovery phase of COVID-19. However, without solid evidence, it remains unclear what that role exactly is. Because of the very limited data that are currently available, it also remains

speculative whether CT during the acute phase has any value in predicting lung fibrosis. After the United States, India is the country with the most COVID-19 cases to date (1). We would be happy to see original data from Dr Prabhakar and colleagues that further define the role of chest CT in diagnosing or predicting pulmonary fibrosis in COVID-19.

Reference

1. COVID-19 coronavirus. Worldometer. <https://www.worldometers.info/coronavirus/>. Published March 12, 2020. Accessed November 17, 2020.

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