Letter to the Editor

100-Day Lung Function Follow-up of a Critical COVID-19 Patient Treated with Mechanical Ventilation and Extracorporeal Membrane Oxygenation

Dear Editor,

A 42-year-old male patient was admitted to intensive critical unit for critical COVID-19 pneumonia. According to the diagnosis and treatment program of novel coronavirus pneumonia (Trial Fifth Edition) issued by the National Health Commission, he was diagnosed as critically ill. He presented with typical ground-glass opacities (GGOs) on admission [Figure 1A1-A2, red boxes]. Follow-up computed tomography (CT) images demonstrated progressions of multiple GGOs and GGO with interlobular septal thickening [Figure 1 Jan 30 B1-B2, red arrow] and fibrous strips [Figure 1 Feb 27 A3, B3, blue arrow]. Lung cavitation, discrete pulmonary nodules, pleural effusions, and lymphadenopathy were absent among the CT findings. The 100-day CT follow-up showed that the early consolidation was almost completely absorbed [Figure 1C2], and only local interlobular septal thickening [Figure 1C1, blue arrow] was observed.

Pulmonary function test showed that forced expiratory volume (FEV1) was 2.79L, and the ratio of forced expiratory volume to forced vital capacity in one second (FEV1.0/FVC%) was 118%. The patient recovered well and was competent for daily activities, without cough, chest tightness, or dyspnea. His 6-min walking distance was 400 m.

Hamilton depression rating scale,[1] Patient Health Questionnaire-9 (PHQ-9),[2] Generalized Anxiety Disorder-7,[3] and Medical Outcomes Survey Short Form-36 (SF-36)[4] were used to evaluate his psychological distress level. The results showed that he had mild level of depression. With respect to his SF-36 results, the scores on social function, emotional function, and mental health decreased significantly. However, there was limited evidence for neurological and psychological influence by SARS-CoV-2.

This case revealed that, although a critical COVID-19 patient had severe diffuse lung damage, 100-day follow-up CT images showed an almost completely consolidation absorption with normal activity tolerance recovery. In addition, the long-term prognosis

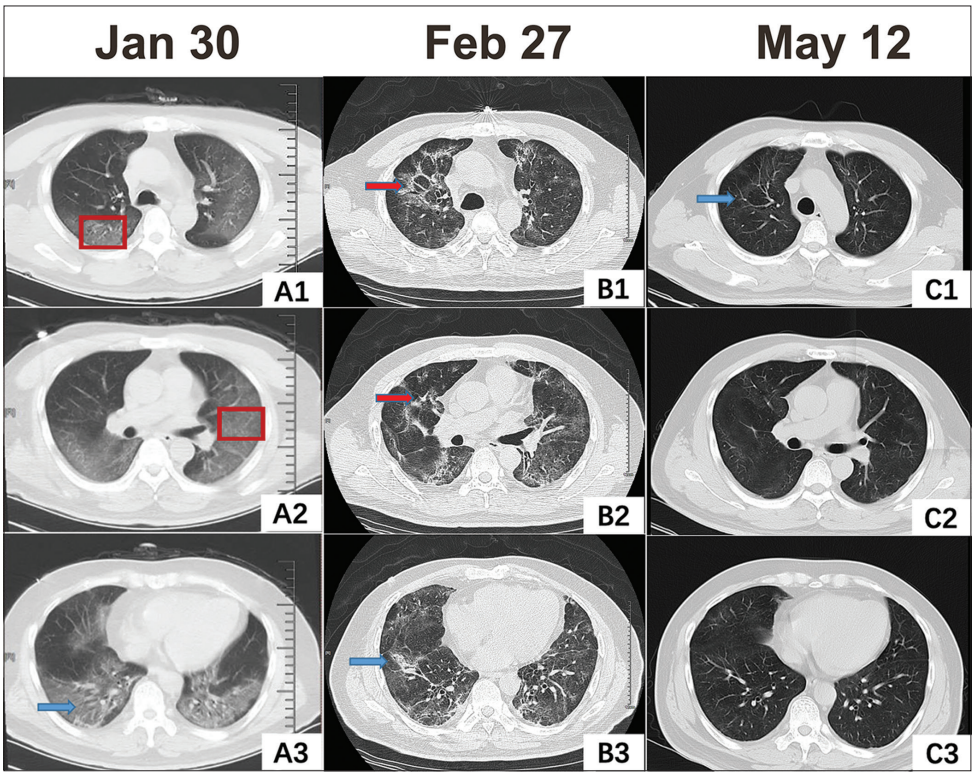

Figure 1: The patient presented with typical ground glass opacities on admission (A1-A2, red boxes). Follow-up computed tomography images demonstrated progressions of multiple ground-glass opacities and ground-glass opacities with interlobular septal thickening (B1-B2, red arrow) a month after hospitalization. C1-C3 showed that the early consolidation was almost completely absorbed.

was satisfactory. The mental and psychological status of the patient was a crucial factor concerning the long-term prognosis, which needs early intervention.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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