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Case Report

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One Case of COVID-19-the Features of CT Image do not Match the Clinical Symptoms

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ABSTRACT

Novel coronavirus disease-19 (COVID-19) has widely spread all over the world and seriously threatened people's health. This disease is currently diagnosed by clinical features, chest Computed Tomography (CT) scan, and nucleic acid test of severe acute respiratory syndrome coronavirus (SARS-CoV-2). Recently, some studies have suggested that multiple ground-glass opacities sign in severe cases. However, the effective treatment for COVID-19 patient's with multiple ground-glass opacities has not been discussed. Herein, we report a case of a 51-year-old man who suffered from COVID-19 with multiple ground-glass opacities. Our findings revealed that the body temperature and clinical laboratory test all returned to normal after this patient received treatment, but the imaging features of this patient are still particularly serious. Furthermore, chest CT showed the multiple ground-glass opacities meanwhile nucleic acid retest of SARS-CoV-2was already negative. These results provide the important reference for the diagnosis and treatment option of COVID-19 with multiple ground-glass.

KEYWORDS: COVID-19, Multiple ground-glass, CT image

CASE REPORT

A 51-year-old man from Kaifeng, China, was admitted to the Qi xian people's Hospital of Kaifeng for a lung infection on Jan 31, 2020. One day before his hospitalization, he had a fever accompanied with paroxysmal cough, body aches, fatigue, but no nausea, sputum, chest tightness, dizziness, vomiting, abdominal pain, diarrhea. On admission, his body temperature was 38.1°C. Clinical laboratory tests showed C-reactive protein concentration was significantly increased at 203.72mg/dL (normal:0.00-8.00mg/dL). Complete blood count showed there were normal counts with leukocytes (5.09×10^9/L;

Normal: 4.0×10^9/L-10.0×10^9/L), neutrophils (3.75×10^9/L; normal: 2.0×10^9/L-7.0×10^9/L),

Monocytes (0.19×10^9/L; normal: 0.12×10^9/L-1.0×10^9/L), and lymphocytes (1.15×10^9/L;

Normal: 0.8×10^9/L-4.0×10^9/L).

All respiratory pathogens were not detected. The chest Computed Tomography (CT) examination showed multiple ground-glass opacities. According to the previous report [1], the imaging score of the patient was 6.On February2, 2020, the patient was diagnosed as a confirmed case of coronavirus disease 2019 (COVID-19) by gene sequencing of the SARS-CoV-2 based on the real-time reverse transcription-polymerase chain(RT-PCR)[2]. For the therapeutic intervention, this patient received levofloxacin (0.6g/day), piperacillin (4.5g/day) and methylprednisolone (40 mg/day) via intravenous drip. At the same time, the patient was given high flow oxygen therapy with 5L/min. After 5 days, the patient's temperature returned to normal and clinical symptoms of chest tightness and cough were obviously relieved. However, the multiple ground-glass opacities of chest CT are still clearly visible. Furthermore, the patient's chest CT showed multiple ground-glass opacities after the initiation of the treatment for more than 20 days, which was different from the general conditions of other patients suffering from COVID-19(Figure 1) [3-5].

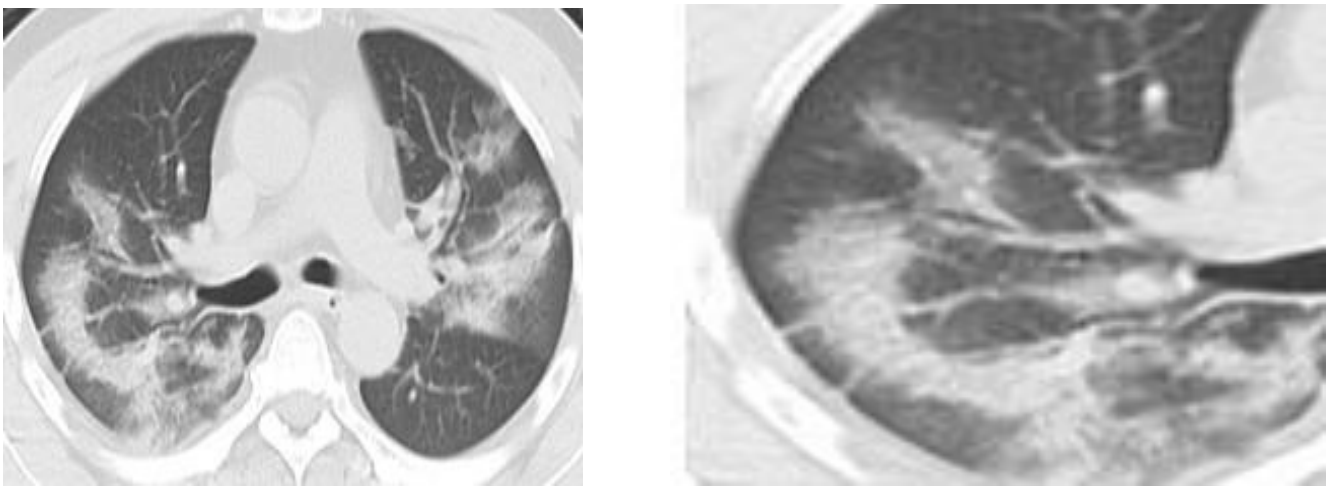

Figure 1: *Chest CT on admission reveals multiple ground-glass opacities at the edge of the lesion*

A. The CT image of multiple ground-glass opacities in bilateral lungs.
B. The high-resolution CT image of multiple ground-glass opacities.

Then, the patient was treated with the same treatment as before. Following such medication regimen, the patient's temperature and clinical laboratory test returned to normal. After 25 days treatment, the result of RT-PCR analysis of COVID-19 was negative, but the chest CT still showed the multiple ground-glass opacities which is an abnormal clinical manifestation [6]. Nucleic acid retest was also negative, and the patient was discharged for outpatient follow-up.

Multiple ground-glass opacities are a nonspecific sign with a wide range of etiology. It is common with inflammatory exudation, chronic stromal disease and acute alveolar disease [7]. Recently, increasing evidence has demonstrated that multiple ground-glass opacities were observed in patients undergoing COVID-19 [8,9]. However, corresponding diagnosis and treatment interventions have not been extensively discussed. In this study, a prolonged diagnosis and therapeutic strategy was adopted for aCOVID-19 patient with multiple ground-glass opacities, and a satisfactory clinical outcome was obtained. Herein, we not suggested that the occurrence of multiple ground-glass opacities in COVID-19 patients should be monitored closely as a potential indicator of deterioration or a long duration of treatment was recommended, because the multiple ground-glass opacities are not consistent with the clinical symptoms or RT-PCR analysis of COVID-19.

CONCLUSION

Collectively, our case provides new experience and inspiration for the diagnosis and treatment of COVID-19. Therefore, the occurrence of multiple ground-glass opacities in COVID-19 patients may not be monitored closely as a potential indicator, and an extension of treatment may be not necessary for COVID-19 patients with multiple ground-glass opacities.

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