

Interesting Progression of COVID-19 Related Pneumonia

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ABSTRACT

COVID-19 is a newly emerging viral disease, the pandemic had major repercussions on human life, economy, and travel. Although multiple management guidelines are proposed none of them proved to be efficacious. Most of the patients have a good prognosis according to multiple studies and few will undergo management in intensive care settings. The disease mainly affects the respiratory symptoms destroying lung tissues bilaterally but may also affect other organs like kidneys, liver, heart, and brain. Here we present a case of a young man who had COVID-19 pneumonia bilaterally but mainly on the left lung. The patient needed mechanical ventilation with a long hospital stay. He was later discharged in a good condition to be admitted again after 1 week for flu-like symptoms and lung changes consistent with COVID-19 pneumonia in the right lung. The study demonstrates the unpredictability of the progression of the viral illness that even patients deemed stable and fit for discharge need more monitoring and further studies to manage the emerging complications that may arise in the rehabilitation period.

Keywords: CT-scan; COVID-19; Intensive care; Pneumonia.

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INTRODUCTION

COVID-19 is an emerging pandemic viral illness cause by SARS-CoV-2 infection. The disease has a rapid and unpredictable transmission. Different management guidelines were introduced; however, their efficacy is still questionable and need more studies to be improved [1]. Based on the currently available information, the majority of patients had a better prognosis. However, few patients were considered in a critical condition, especially elderly patients and those with chronic illnesses [2]. Common complications that could affect patients included acute respiratory distress syndrome (ARDS), cardiac injury, secondary bacterial infection, kidney and liver injuries, arrhythmia, and shock. The disease progresses more rapidly in the elder population, with the median number of days from the start of the symptoms to death is shorter in people aged 65years and more [3].

The case presents a new progression of the disease from one lung to the other after nearly 1 month of the start of

the symptoms, and after the patient was discharged from the hospital labeled as COVID-19 negative.

CASE PRESENTATION

A 33-year-old male, with no known medical problems, came to Al Ain Hospital Emergency Department in Al Ain city in UAE with cough, fever, and shortness of breath, COVID19 was confirmed by PCR test. His laboratory investigations showed a white blood cell count of $9.6 \times 10^9/L$, C-reactive protein was 173 mg/L, serum ferritin was 1006 mcg/l, and D-dimer was normal. Chest CT-scan (Figure 1) showed changes consistent with COVID19 mainly in the left lung. He was admitted to the medical unit. However, after 4 days his oxygen saturation decreased, and he needed non-invasive ventilation. Hence, he was transferred to the intensive care unit, and within 2 days he needed endotracheal intubation.

During his stay, his blood results showed a white blood cell count of $21.2 \times 10^9/L$, C-reactive protein of 5 mg/L, S. ferritin of 1030 mcg/L, and D-dimer increased to 10 mg/L. The clinical condition was improved. Later, the patient was extubated, stepped down to the medical unit, and discharged after 25 days of admission. The real-time Polymerase Chain Reaction (PCR) result was negative. One week later, the patient was admitted to the emergency department with a

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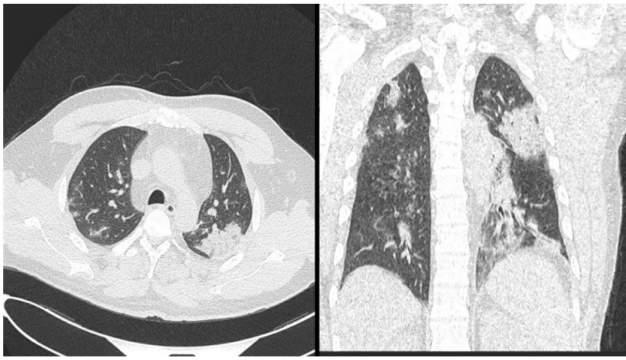


Figure 1. Chest CT-scan showing bilateral peripheral rounded and patch like multifocal ground-glass opacities with areas of consolidation noted mostly in the left lung. CT severity: Moderate to severe COVID-19 pneumonia.

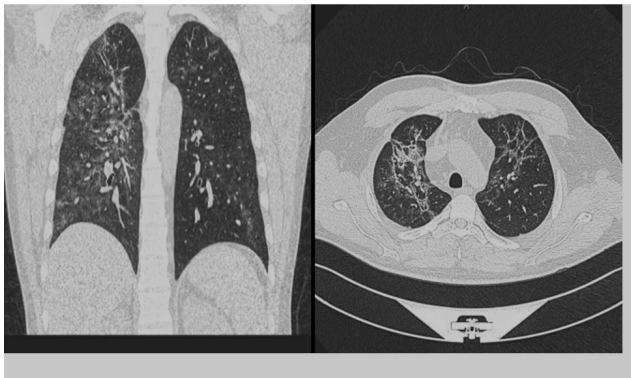


Figure 2. Chest CT-scan showing mainly central ground-glass opacities with septal thickening, areas of consolidation, and fibrotic bands involving the right lung. CT severity: Moderate to severe COVID-19 pneumonia.

flu-like illness and mild shortness of breath.

His CT scan was repeated (Figure 2), which showed COVID-19 like pneumonia in the right lung. He was re-admitted to our medical unit, improved, and discharged after 7 days.

Although during the second admission his PCR for COVID-19 was negative, the changes observed between the two CT-scans are interesting and assumed that COVID-19 patients could still have a progression of the infection in an unpredictable pattern and that discharged patient would need more follow-up and imaging to examine the degree of resolution and/or the progression of the infection.

DISCUSSION

Pneumonic changes have been reported in patients with COVID-19 disease. The majority of patients had peripheral, bilateral, and multilobed regions of ground-glass opacities and to a lesser extent patchy consolidation [4]. The patient in our case had similar changes but mainly in one lung and after the resolution of symptoms and negative PCR results, the patient had reappearance of his initial symptoms with new pneumonic changes in the other lung. It is unclear why the patient developed new pneumonic changes on the other side, although the patient tested negative for COVID-19 on his second admission, his symptoms and radiological findings are strongly suggestive of COVID-19 infection or progression of the previous infection.

CONCLUSION

In conclusion, we still have a long way to understanding the pathophysiology and progression of SARS-CoV-2 infection, and more studies are needed to ensure that clinicians are capable of predicting the prognosis and the course of infection and optimizing the treatments and interventions needed to cure patients.

CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

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