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CASE REPORT

A Rare Computed Tomography Finding as Pulmonary Cavity in COVID-19: A Case Report

COVID-19'un Nadir Bir Tomografi Bulgusu: Akciğer Kavitesi

Hümeyra Yücetürk, Murat Bülent Küçükay

Department of Internal Diseases, Lokman Hekim University Faculty of Medicine, Ankara Hospital, Ankara, Turkey

Abstract

Most frequent findings in computed tomography (CT) in coronavirus disease 2019 (COVID-19) are usually bilateral, basal, and peripherally located ground glass opacification and consolidation. Cavitary lesions in the lungs usually result from bacterial and fungal infections, malignities, and rheumatologic diseases. In literature, cavitary lesions in CT related to COVID-19 are rarely reported. In this case report, CT showed a single cavitary lesion, which was 6 centimeters in diameter and developed 7 days after discussing the COVID-19 diagnosis in a 70-year-old—Caucasian—female patient.

Keywords: Tomography; COVID-19 virus disease; Thoracic cavity; Case report

Coronavirus disease 2019 (COVID-19) outbreak started in December 2019 in China and has become a pandemic in very short time. The golden standard in the diagnosis of COVID-19 is the polymerase chain reaction test for severe adult respiratory syndrome Coronavirus 2 (SARS-CoV-2). Thorax computed tomography (CT) may be helpful in diagnosis and determining the disease progression. Most frequent CT findings in COVID-19 are bilaterally and peripherally located ground glass opacification.[1] Crazy-paving pattern, air bronchograms, pleural changes, fibrosis, and nodule formations are other findings of CT in COVID-19.[2] Cavitary pulmonary lesions are mostly seen in bacterial and fungal infections, rheumatological diseases, and malignities,[3] and are not characteristic findings for COVID-19. Now, because of COVID-19, cavitary lesions are rarely reported in literature.[4–7] In this case report, a patient who was diagnosed with COVID-19 and had a cavitary lesion in the left lower lung lobe during the early disease period is presented.

Case Report

A 70-year-old—Caucasian—female patient was presented to the emergency department with nausea, diarrhea, fatigue, myalgia, and high fever complaints that started 2 days before admission. She had diabetes mellitus, hypertension, and was treated with insulin aspart 3 × 10 units before meals and perindopril, indapamide, and amlodipine combination 1 × 8/2.5/10 mg. Physical examination

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Correspondence: Hümeyra Yücetürk, M.D. Lokman Hekim Üniversitesi Tıp Fakültesi Ankara Hastanesi, İç Hastalıkları Anabilim Dalı, Ankara, Turkey
E-mail: yuceturkhumeyra@gmail.com **Submitted:** 30.09.2021 **Accepted:** 22.11.2021

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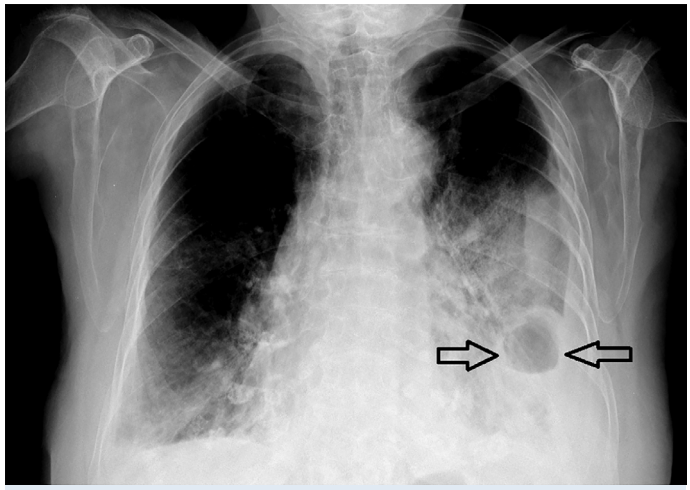


Figure 1. Cavitary lesion in chest X-ray at the 7th day.

was normal; however, oxygen saturation was low as 94% from fingertip with a pulse oximeter and severe coarse rales could be heard at lower lobes of the lung bilaterally in auscultation. PCR testing for COVID-19 was found to be positive and she was admitted to a hospital that provided treatment for COVID-19. She was treated with pantoprazole 1 × 40 mg, acetylcysteine 1 × 300 mg, furosemide 3 × 40 mg, and methylprednisolone 1 × 40 mg intravenously, enoxaparine 1 × 4000 units subcutaneously, and favipiravir per oral (2 × 1600 mg on the first day, followed by 2 × 600 mg for 4 days). Laboratory testing revealed C-reactive protein levels as 1260 mg/L (normal 0–50), alanine aminotransferase as 71 U/L (normal 0–33), aspartate aminotransferase as 112 U/L (normal 0–35), D-dimer as 1.1195 mg/L (normal below 0.25), creatinine as 118.45 µmol/L (normal 44.2–79.5), lactate dehydrogenase as 4.22 µkat/L (normal 2.25–3.57), ferritin as 683 µg/L (normal 15–220), and procalcitonin as 0.479 µg/L (normal below 0.05). Other laboratory findings were within the normal range. Chest X-ray revealed pleural effusion in the left costophrenic sinus. A control chest X-ray was obtained on the seventh day of treatment and a new cavitary lesion was detected (Fig. 1). Thorax CT revealed a cavitary lesion in the lower left lung lobe, which was measured to be 6 × 3.5 cm in size (Fig. 2, 3). Five days before hospital admission, thorax CT was also performed in another hospital; however, no cavitary lesion was detected. She did not have a history of immunosuppressive condition or disease that could result in a cavitary lesion. On the 10th day of treatment, the patient's dyspnea and confusion were prominent and she was transferred to the intensive care unit of the hospital. On the 15th day of hospitalization, she died due to sudden cardiac arrest.

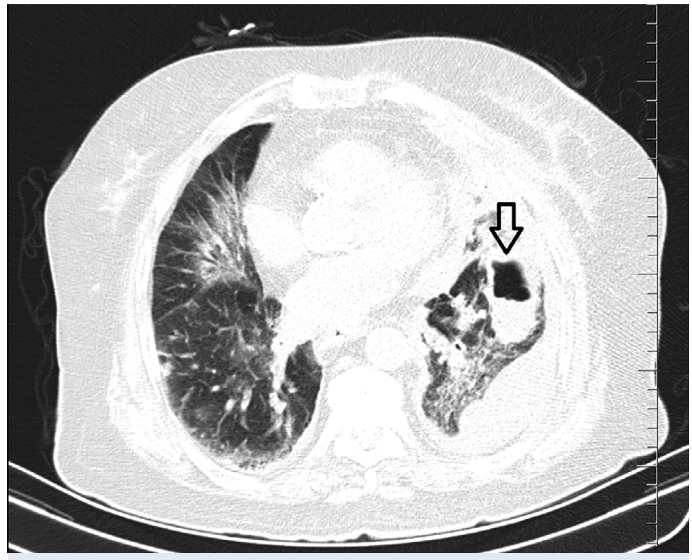


Figure 2. Cavitary lesion in thorax computed tomography at the 7th day.

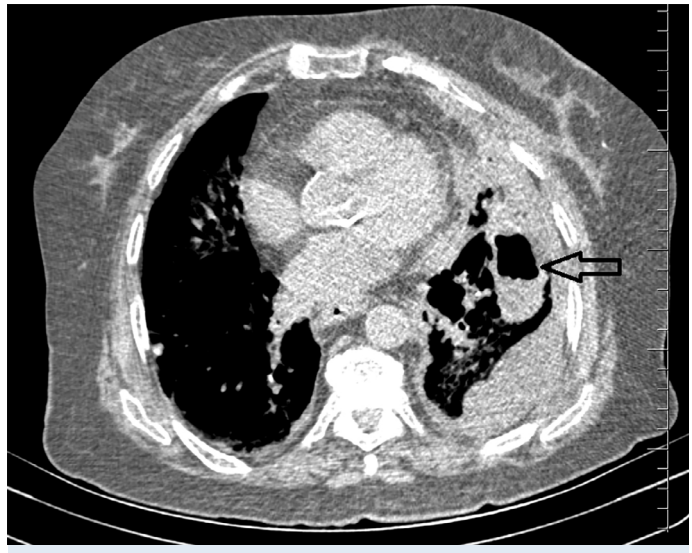


Figure 3. Cavitary lesion in thorax computed tomography at the 7th day.

Discussion

In COVID-19, the virus replicates in the bronchial mucosa or alveolar epithelial cells and causes injury to the interlobular septae, interstitial epithelial tissue, and parenchyma of the lungs.[3] There are a few cases that report on a cavitary lesion in COVID-19. In a case from China, the patient had a cavitary lesion after 9 days of diagnosis and it was relieved without any supplemental treatment.[4] In other case reports, cavitary lesions developed after 10 to 21 days of diagnosis of COVID-19.[5–7]

In this case report, a cavitary lesion was detected on the 7th day after diagnosis, which is much earlier compared

with the duration mentioned in other previously reported cases.[4–6] Etiology of the cavitary lesion could not be elucidated. Because the patient did not have a history of a previous immunosuppressive condition and any other fungal or bacterial infection and it was detected after COVID-19 diagnosis, the cavitary lesion of this patient was thought to be related to COVID-19. In previously reported cases,[4–7] cavities were reported to be healed; however, this patient died with the cavity. The age and comorbidities of the patient and the relatively heavy clinical course of COVID-19 might be the factors that prevented the healing of the cavitary lesion. Considering this reported case, it may be wise for the physician to consider COVID-19 in patients with relevant clinical findings and cavitary lesions that might be detected in imaging studies.

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References

1. Alanlı R, Küçükay MB, Çiçek O, Yalçın KS, Beşirbellioğlu BA. Concordance of PCR and early thorax computed tomography findings in COVID-19 patients. Duzce Med J 2020; 22(Special Issue):39–43. [CrossRef]
2. Ye Z, Zhang Y, Wang Y, Huang Z, Song B. Chest CT manifestations of new coronavirus disease 2019 (COVID-19): a pictorial review. Eur Radiol 2020;30(8):4381–9. [CrossRef]
3. Parkar AP, Kandiah P. Differential diagnosis of cavitary lung lesions. J Belg Soc Radiol 2016;100(1):100. [CrossRef]
4. Chen Y, Chen W, Zhou J, Sun C, Lei Y. Large pulmonary cavity in COVID-19 cured patient case report. Ann Palliat Med 2021;10(5):5786–91. [CrossRef]
5. Chen J, Peng S, Zhang B, Liu Z, Liu L, Zhang W. An uncommon manifestation of COVID-19 pneumonia on CT scan with small cavities in the lungs: A case report. Medicine (Baltimore) 2020;99(28):e21240. [CrossRef]
6. Jafari R, Cegolon L, Masghsoudi H, Zhao S, Fathi S, Khedmat L, et al. Simultaneous Giant cavity pulmonary lesion and pneumothorax following COVID-19 pneumonia. Radiol Case Rep 2021;16(9):2534–6. [CrossRef]
7. Selvaraj V, Dapaah-Afriyie K. Lung cavitation due to COVID-19 pneumonia. BMJ Case Rep 2020;13(7):e237245. [CrossRef]