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Case Report

Incidental typical COVID-19 appearance on the lung bases, visualized at abdominal CT for a patient that presented with abdominal pain and nausea ☆,☆☆

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ABSTRACT

This is a case report of a 55-year-old male patient, medically free presented to the emergency department at our hospital, King Fahd Armed Forces Hospital, Jeddah, Saudi Arabia. The patient presented with generalized abdominal pain and nausea only, without fever or any respiratory symptoms. On a computed tomography scan examination of the abdomen to rule out bowel ischemia, an incidental finding of a typical appearance of COVID-19 pneumonia was found at the visualized lung bases. The diagnosis of COVID-19 was confirmed afterward by laboratory testing. Conclusion: Typical COVID-19 findings can be suggested on lung bases at abdominal CT.

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Introduction

The novel coronavirus disease of 2019 (COVID-19) has come to be well recognized globally as a new pandemic, causing severe acute respiratory syndrome in a small number of infected patients. Hence the name severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has become established. As of April 25, 2020, more than 2,686,785

confirmed cases and 184,681 deaths had been documented globally [1].

It is well-known that most patients with COVID-19 have a fever, along with signs and symptoms of respiratory illness, such as cough and dyspnea. To date, there is some unclarity about the extrapulmonary symptoms and manifestations, such as those related to the gastrointestinal tract. Gastrointestinal presentation of the disease, while uncommon, has been reported [2].

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Case report

We present the case of a 55-year-old male patient, medically free, who presented to the emergency department (ED) with generalized abdominal pain and nausea lasting eight days with no associated vomiting or diarrhea. He had no fever, cough, shortness of breath, or other respiratory symptoms. His vital signs were stable; the oxygen saturation of the blood was 97%, the body temperature was 36.8, his respiratory rate was 22, and the pulse was 90. On examination, the abdomen was soft and lax. The patient had a history of visiting another hospital five days before the current presentation for the same complaint and was discharged afterward since there was no proven explanation for his presentation.

The patient denied any contact with confirmed or suspected COVID-19 patients. The laboratory work results were unremarkable apart from elevated high red blood cell count (7.2 mCL) and elevated lactic acid dehydrogenase (314 U/L). He was sent to our department for abdominal CT scan to rule out bowel ischemia. The abdominal CT was done with intravenous (IV) contrast utilizing the bowel ischemia protocol (precontrast, arterial, and portal venous phase). Negative oral contrast (water) was given to distend the bowel loops, but the patient could not tolerate the full amount.

The scan was negative for bowel ischemia or any acute abdominal findings. Incidentally, the visualized lung bases revealed bilateral peripheral multifocal areas of ground-glass opacity (GGO), with rounded morphology and crazy paving appearance, considering the background interstitial thickening. These GGOs show a peripheral denser rim, giving the reversed halo (atoll) sign. These findings were the typical CT appearance of COVID-19, as described by the Radiology Society of North America (RSNA) [3]. (Fig. 1).

The referring ED physician was informed about the CT findings immediately. Our CT technician was referred immediately to the infection control department to follow the hospital guideline designed for healthcare workers who had been exposed to patients with suspected COVID-19. The patient had a nasal swab, and the result was found to be positive for COVID-19. The patient was admitted into the isolation ward for COVID-19 patients. The chest radiograph done the next day revealed bilateral peripheral multifocal opacities, mainly in the middle and lower lung zones (Fig. 2).

Since there was no apparent surgical explanation for the abdominal pain, no surgical interventions were needed. Three days later, his oxygen saturation decreased up to 88%. Afterward, supportive management was established, but the patient showed no response and chest X-ray showed disease progression (Fig. 3). Consequently, he was then admitted to the intensive care unit and intubated. A continuous positive airway pressure therapy was initiated. Nine days later, the patient extubated after the room air oxygen saturation reached 92%. He was then shifted back to the isolation ward, follow-up PCR test was negative for COVID 19.

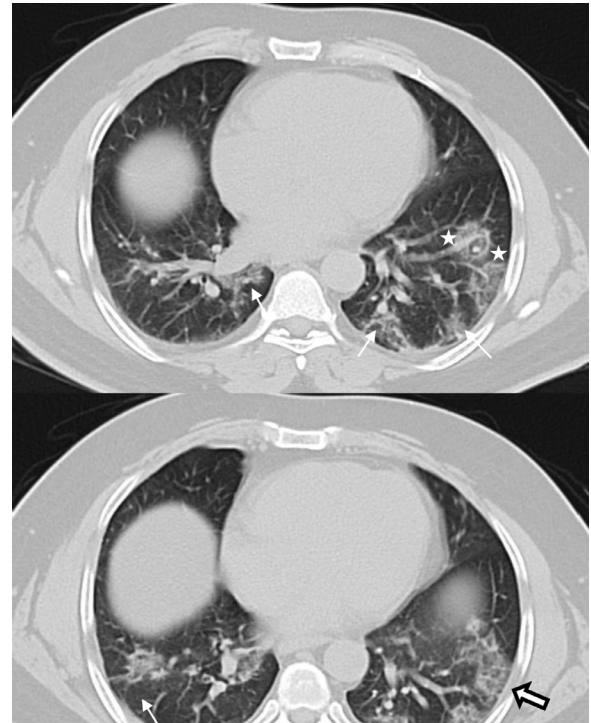


Fig. 1 – Computed tomography of the lower cuts of the chest show bilateral multifocal peripheral GGO of rounded morphology at the posterior lower lobes (arrows). Note the peripheral dense rim representing the atoll sign (star), and the crazy paving (opened bold arrows).

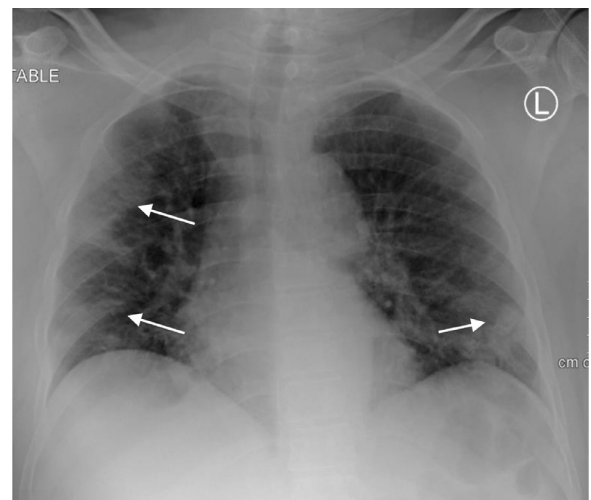


Fig. 2 – Frontal chest radiograph demonstrates peripheral multifocal opacities at the right middle and lower lung zones bilaterally.

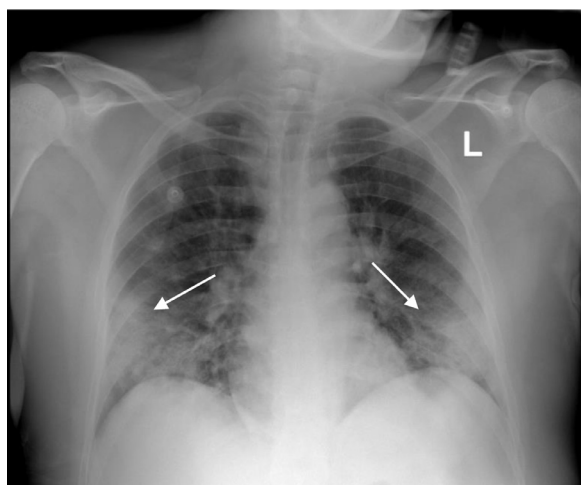


Fig. 3 – Frontal chest radiograph done before intubation, it demonstrate interval resolution of the right middle lung zone opacity and progression of lower zone opacity.

Discussion

Up to the submission date, the number of confirmed COVID-19 cases was rising dramatically. In the current pandemic state, identifying or suspecting COVID-19 cases among those who present to the ED with respiratory symptoms is expected, as the typical presentation is well known [4]. The real challenge is identifying the disease early in asymptomatic patients and those with atypical presentations like digestive symptoms.

Early studies of COVID-19 reported that the proportion of patients presenting with digestive symptoms was low [5]. However, the evidence for enteric involvement is emerging. A descriptive, cross-sectional study was done upon 204 confirmed patients with COVID-19 at Hubei province, China. There were 99 cases (48.5%) that presented to the hospital with digestive symptoms as their chief complaint. Seven of them (3.4%) had digestive symptoms but no respiratory symptoms. Anorexia and diarrhea dominate among the symptoms (83.8% and 29.3%, respectively), while abdominal pain was reported in 0.4% of the patients [2].

On the other hand, a very recent retrospective study at New York University (NYU) reported 23 patients who had an abdominal CT for digestive symptoms, and COVID-19 was considered based on unexpected lung base findings. Abdominal pain was the most common clinical indication among 19 patients, and eleven patients had no extrapulmonary findings. Seventeen of the patients tested positive for COVID-19 [6].

The sole presentation of abdominal pain in COVID-19 patients has been barely reported though. Our patient presented to the emergency department with generalized abdominal pain and nausea, with incidental findings on the lung bases at abdominal CT that strongly suggested COVID-19 pneumonia. Detecting the typical appearance of COVID-19 in the visualized part of the lung bases made the presence of the disease a strong possibility. The sensitivity and specificity of chest CT were 94% and 37%, respectively, based on a recent

meta-analysis study. However, variability has also been reported [7]. A combination of GGO and consolidative opacities is the most common radiologic finding in chest CT and can be found in up to 88% of cases with COVID-19 [8–11].

In our case, the abdominal radiologist was first to suggest COVID-19 after detecting the typical features of COVID-19 infection. The CT findings revealed at least 4 typical features of COVID-19 as per RSNA [3].

A retrospective study done on 3 patients at the University of Chicago found that all similarly presented with abdominal pain without significant respiratory symptoms. The abdominal radiologist suspected the differential diagnosis because of findings in the lung bases on the abdominal CT, and then the disease was not originally suspected in the ED because of the lack of a typical presentation. The referring healthcare provider was informed about the suspicion. Later on, SARS-CoV-2 PCR testing confirmed the diagnosis [12].

In another similar case report from Boston, the patient presented to ED with abdominal and scrotal pains, and the radiologist detected a pulmonary ground-glass opacification and consolidation on the upper cuts of the abdomen CT scan that lately returned positive for COVID-19. In this study, the lack of communication led to unnecessary health worker exposures and risk [13].

A high index of suspicion should be maintained during this outbreak of COVID-19, as an early detection prevents the spread of infection, particularly when there is no respiratory symptom. Thus, an investigation must be carried out starting from ED reception and the attending physician, and it might end up with the radiologist giving more attention to the image findings (ie, lung bases at abdominal CT) that suggest COVID-19 pneumonia.

Conclusion

Atypical presentation of COVID-19 by abdominal pain is uncommon but emerging and must be considered, particularly in high-prevalence areas. Furthermore, research and investigations about the gastrointestinal tract involvement and presentation of the disease are encouraged. The index of suspicion among physicians, including radiologists, must be raised during this pandemic for early detection of atypical presentations of COVID-19.

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