A 73-Year-Old Man with a History of Hypertension and Ischemic Heart Disease Who Presented with Pain in the Right Flank as a Symptom of COVID-19 Pneumonia

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Conflict of interest: None declared

Patient: Male, 73-year-old
Final Diagnosis: COVID-19 pneumonia
Symptoms: Flank pain
Medication: —
Clinical Procedure: —
Specialty: Infectious Diseases • General and Internal Medicine • Microbiology and Virology

Objective: Unusual clinical course
Background: Coronavirus disease 2019 (COVID-19) has been increasing all over the world. During the pandemic, a variety of presentations have been described. Nevertheless, some patients remain asymptomatic. Respiratory symptoms and gastrointestinal symptoms are often reported among these patients.

Case Report: Here, we report a case with flank pain. Radiological images were significant for bilateral consolidation, which raised a high suspicion of COVID-19. Hence, on further investigation, he was diagnosed with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection.

Conclusions: In the time of the COVID-19 pandemic, patients with multiple comorbidities may present atypically. Flank pain, which is not a usual presentation, may raise the suspicion of COVID-19 infection.

MeSH Keywords: Coronavirus • COVID-19 • Flank Pain • Tomography, X-Ray Computed • Urology

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Background

The coronavirus disease 2019 (COVID-19) pneumonia, a disease caused by a newly discovered RNA virus, belongs to the Coronaviridae family, known as the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [1]. COVID-19 was initially reported in Wuhan City, Hubei Province, China, in December 2019 as a pneumonia of unknown etiology and was declared a global health emergency by the World Health Organization (WHO) on 30 January 2020 [1,2]. The disease spectrum ranges from asymptomatic carriers to critical diseases of respiratory failure, shock, or multiorgan dysfunction, with an overall case fatality rate of 2.3% [3]. The exact frequency of asymptomatic infection is still unknown and many studies describe different incidence rates. Objective abnormalities have been described even in these asymptomatic cases. A study from China has shown evidence of CT scan findings in 70.8%, with 50% having typical ground-glass opacities (GGO) or patchy infiltrates [4].

In this case report, we describe a patient with COVID-19 who presented atypically with flank pain. An incidental abnormality in the lower cut of the chest in the computed tomographic (CT) image led to the diagnosis of SARS-CoV-2 infection, as confirmed by nasopharyngeal viral reverse transcription-polymerase chain reaction (RT-PCR).

Case Report

A 73-year-old Pakistani man with a background of hypertension, coronary artery disease (CAD), atrial fibrillation, and left ventricular (LV) thrombus, who was on anticoagulation and had benign prostate hypertrophy (BPH), presented to the Emergency Department with a complaint of right-sided flank pain and lower-back pain. There were no other associated symptoms except for longstanding urinary hesitancy. He did not have fever, dysuria, diarrhea, vomiting, or constipation. There were no complaints of any respiratory illness, cough, shortness of breath, or chest pain. He did not have any known contact with people with respiratory tract illnesses or positive cases of COVID-19. His home medications included aspirin, clopidogrel, lisinopril, pantoprazole, rosuvastatin, tamsulosin, and warfarin.

On examination, he was fully conscious and oriented, afebrile, and maintaining oxygen saturation more than 97% on room air, with a respiratory rate of 18 bpm. A chest examination revealed equal chest expansion with bilateral vesicular breath sounds. There were no added sounds. The rest of the physical exam was unremarkable. His laboratory investigations showed no leukocytosis (WBC 7.0×10³/μL), normal hemoglobin of 13 gm/dL, and platelets 186×10³/μL. The results were remarkable for a supratherapeutic INR of 6.0 and acute renal impairment with a creatinine of 161 μmol/L and urea 14 mmol/L. The other renal and liver function test results were unremarkable.

Initially, a computed tomography (CT) scan for the urinary tract without contrast was done to rule out obstructive uropathy, showing foci of infiltrative consolidations seen in the basal segments of the visualized sections of both lungs, more on the right side (Figure 1A, 1B). Due to this incidental finding in the CT scan, our team decided to keep the patient under appropriate precautions. The second set of SARS-CoV-2 RT-PCR from nasopharyngeal swabs

![Figure 1. (A) Chest computed tomography (CT) findings in a 73-year-old man with COVID-19. Chest CT axial image reveals bilateral consolidations and ground-glass opacities in the lower lobes (red arrow). (B) Computed tomography axial image shows consolidation more prominent in the right lower lobe (red arrow).](image-url)
confirmed our suspicion. Both nasopharyngeal swabs were collected using Copan FLOQSwabs® and a sterile tube containing Copan’s Universal Transport Medium™ (UTM®; COPAN, Brescia, Italy) and tested using the Cobas® 6800/8800 systems.

A chest X-ray showed right subpleural peripheral heterogeneous opacities along the mid- to lower-lung zones, likely representing subpleural consolidation, as well as left basal consolidation (Figure 2).

The patient was admitted to the standard medical ward as a case of COVID-19 pneumonia. He received ceftriaxone (2 g IV once daily), azithromycin (500 mg tablet once daily), hydroxychloroquine (400 mg twice daily for 1 day and then continued daily), and oseltamivir (150 mg capsule twice daily).

Administration of ritonavir or lopinavir was not attempted due to their interaction with clopidogrel; both can lead to a reduction in the bioavailability of clopidogrel. He was on clopidogrel because of a recent non-ST elevation myocardial infarction (NSTEMI), and he underwent a coronary intervention to the left anterior descending (LAD) and the proximal right coronary arteries.

The patient had an uneventful hospital stay. His abdominal pain improved with minimal analgesia with paracetamol, and creatinine normalized with hydration. He remained asymptomatic throughout the stay.

**Discussion**

Lung bases have been reported to be abnormal in many COVID-19-infected patients. A meta-analysis by Bao et al. reported ground-glass opacities (GGO) (83.31%) as the most common radiologic feature of COVID-19 pneumonia [5]. Moreover, a recent systematic review by Salehi et al. showed that consolidation without GGO, focal pleural thickening, vascular enlargement, air bronchogram, and bronchial wall thickening are the other typical findings early in disease [6]. White lung stage (late/complicated) and parenchymal fibrotic bands (late/remission) can be noted at late stages of the disease [6].

In suspected COVID-19 cases, CT features can resemble organizing pneumonia, notably peripheral GGO and bilateral and multi-lobe nodular opacities [7]. Recent studies have reported various other patterns, such as diffuse GGO, linear, curvilinear, or peri-lobular changes, or consolidation [8,9]. These are usually non-specific findings but are strongly associated with COVID-19 infection. Abdominal images usually show this in patients who lack classic respiratory symptoms [8].

Most COVID-19-infected patients present with a broad range of pulmonary symptoms. Some patients are asymptomatic, while severe cases present with acute respiratory distress syndrome (ARDS). However, about 20% of patients present with abdominal pain, diarrhea, or vomiting, along with the respiratory symptoms. Moreover, around 5% to 10% of patients present only with digestive symptoms [8,10,11].

CT changes may precede the detection of the virus on RT-PCR, perhaps because of the sensitivity of the RT-PCR testing, which ranges from 42% to 71% [7, 9]. Moreover, previous publications reported that some patients have initial negative RT-PCR but become positive after 4 days [7]. It is important to note that the accuracy of the RT-PCR result depends on the method of sample collection and variability among RT-PCR testing kits, and this might have affected the outcome of previous studies [12].

Atypical symptoms or asymptomatic patients will continue to present as the COVID-19 pandemic continues. As mentioned previously, up to 10% of patients present with gastrointestinal symptoms; however, the proportion of patients presenting with atypical symptoms remains unclear [10,11,13] due to inadequate data and a lack of accurate data on disease prevalence [11]. Since some infected patients with SARS-CoV-2 are asymptomatic, our patient’s presentation of flank pain may or may not have been related to COVID-19.

Figure 2. Chest X-ray shows right subpleural peripheral heterogeneous opacities along the mid- to lower-lung zones (red arrow) and left lower-zone consolidation (black arrow).
As most of the patients with chief complaints of loin pain are investigated by Emergency Departments with non-contrast CT to rule out urolithiasis, we recommend that radiologists also focus on lower cuts of the lungs.

Conclusions

There are various presentations of patients with SARS-CoV-2 infection. Flank pain can be referred pain due to diaphragm irritation and should raise the suspicion of COVID-19. During this pandemic, we suggest that any patient presenting with flank pain, especially in high-risk groups, should be considered to have a high pretest probability for COVID-19 and should be isolated pending work-up, thereby optimizing the safety of healthcare workers.

Conflict of interest

None.

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