



## Flank Pain as the Initial Manifestation of COVID-19

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### Abstract

**Background:** COVID-19 is a disease that has an extensive clinical manifestation. Symptomatic patient can present either with the primary and known typical symptoms or can present with unusual and rare symptoms of this disease.

**Case Report:** In this report we present, a 26-year-old COVID-19 positive female who presented with left sided flank pain as the initial manifestation of COVID-19. She had clear blood work-up and radiologic imaging which could have led to misdiagnosis of COVID-19 had she not been a direct contact of another COVID-19 positive patient.

**Conclusion:** The importance of being aware of the under-recognized wide spectra of rare initial manifestations of COVID-19 cannot be overstated when it comes to the early diagnosis of this disease. The knowledge of atypical symptoms of COVID-19 is essential in order to ensure the safety of our health care settings and crucial for the battle against this disease.

### Introduction

Since the first documented cluster of COVID-19 in Wuhan, capital of Hubei Province, People's Republic of China, in the year 2019 [1], more than 150,110,310 confirmed cases have been reported worldwide as of today (April 30<sup>th</sup>, 2021). This disease caused by a single-stranded RNA virus, the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) spreads through respiratory droplets and invades the lower respiratory tract of its host. Regardless of age, patients who are infected can be asymptomatic or present with a quite diverse range of clinical symptoms ranging from mild to severe. In order to contain the transmission of this contagious and deadly disease, early diagnosis is of utmost importance. Patients with rare symptoms can easily mask the SARS-CoV-2 infection making it prone for misdiagnosis. As world is still learning and acquiring new knowledge about this disease, atypical clinical presentation of COVID-19 is an area requiring further comprehensive studies. Atypical symptoms of COVID-19 can present alone without manifesting other typical clinical symptoms of this disease. Here, we attempt to contribute to this expanding knowledge of COVID-19 by reporting a case of a 26-year-old COVID-19 (RT-PCR) positive female with gradual onset left flank pain as the initial and the only primary symptom.

### Case Presentation

A 26-year-old COVID-19 positive female patient presented to medical facility with complaints of gradual onset, left-sided flank pain with advancing severity. Her pain was described as a non-radiating ache, predominantly on the left costovertebral angle, but also present on the left lateral aspect of the flank. She rated her pain as 9/10 and her pain did not change with position when lying flat or sitting. She denied any type of trauma to the chest, flank area or abdomen. There were no other associated symptoms except three episodes of vomiting and constipation within the past three days.

Two days prior to consultation, a direct contact of hers tested positive for COVID-19 and one day prior to consultation the patient was tested positive for COVID-19. She is a known case of chronic idiopathic urticaria for which she is not on any treatment, but finds relief by taking antihistamines during severe episodes of hive outbreak. The surgical and medical history was unremarkable except that her urologic history revealed the presence of renal calculi, diagnosed in the year 2016, for which she underwent medical management and was free of any renal symptoms till date. Apart from this, she had a clear medical profile with a normal G6PD and thalassemia status.

Although on initial examination, patient appeared uneasy and in distress, she was conscious, oriented and afebrile with a temperature of 36.7- degree Celsius. She had a respiratory rate of 20

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Figure 1: Non-contrast CT KUB.

breaths/min, a heart rate of 104 beats/min, a blood pressure of 130/70 mmHg and maintained oxygen saturation level at 99% in room air. Her physical examination demonstrated a clear chest without any crackles, creaking or brushing sound. She had a soft and non-tender abdomen on palpation with normal bowel sounds. Her cardiac examination was normal with regular S1 and S2 heart sounds, no rubs or murmurs were noted. Neurological examination was unremarkable as well with a 5/5 motor power, normoreflexia and normal muscle tone on all four limbs, her planter was down going bilaterally and she had no sensory deficit at the levels of thoracic dermatomes. A positive Pasternacki sign was elicited on her left costovertebral angle without any distinguished discoloration or bruising.

Given the past medical history of renal calculi and the presenting symptoms, a non-contrast CT of the kidneys, ureters and bladder was done which showed no evidence of radio-opaque urinary stones, both the kidneys displayed normal site, size and parenchymal thickness as seen in Figure 1. PA view chest X-ray was done, which was clear with no signs of diffused glass ground opacities within the lung parenchyma. Apart from an elevated CRP level of 1.82 mg/dL, she had no other notable abnormality in her blood reports with a renal profile and differential leukocyte counts within normal limits as seen in Table 1.

The patient was admitted for pain management and monitoring of COVID-19. She was started on 2 mg Inj. Emeset and 1 g IV paracetamol, followed by 50 mg Inj. Tramadol, but did not find any significant improvement in the pain. Hence, she was administered with 2 mg Inj. Morphine, which effectively reduced her pain. The following day, after a second dose of 2 mg Inj. Morphine her pain had completely gone and she was started on a 5-days course of prophylactic antibiotics as per facility protocol. The patient was under observation for 5 days and then was discharged in stable conditions upon request. Patient recovered well gradually, without developing any other primary symptoms of COVID-19 such as fever, dry cough and fatigue [2] within the period from her admission till the completion of her mandatory isolation of fourteen days.

## Discussion

It has been over a year since the WHO declared COVID-19 pandemic [1] and till date numerous cases worldwide have reported a broad range of signs and symptoms manifested by this disease

Table 1: Laboratory findings - blood analysis.

Laboratory Parameters	Result	Reference Range
CRP	1.82 (mg/dL)	<0.50
<b>Renal Profile</b>		
Blood urea	14.98 (mg/dL)	15.0-40.0
BUN	7.00 (mg/dL)	
Creatinine	0.68 (mg/dL)	0.57-1.11
Uric Acid	4.00 (mg/dL)	2.6-6.0
<b>DLC</b>		
Neutrophil Count	42.1 (%)	42.5-73.2
Lymphocytes	34.6 (%)	18.2-47.4
Monocytes	14.6 (%)	4.3-11.0
Eosinophils	8.6 (%)	0.0-3.0
Basophils	0.1 (%)	0.0-0.7

[3]. These include cases of both adults [4,5] and children [6] alike, presenting with initial complaints of abdominal pain or flank pain with or without other associated typical symptoms of COVID-19.

Flank pain is not a primary symptom of COVID-19. Therefore, in this case, as initial differentials only common causes of flank pain were considered and ruled out, such as musculoskeletal, renal etiology and mechanical causes. In order to understand the obscure pathogenesis of this case, it is essential to investigate the uncommon causes of flank pain which can be related to COVID-19. The parietal pleura is innervated by the intercostal nerves, which also innervate the rib cage in a dermatomal fashion. Irritation of the pleural branches of the intercostal nerves may thus result in hyperesthesia of the cutaneous branches which innervate the flank area [7]. In this regard, it is safe to declare that the flank pain in this case is a referred pleuritic pain associated with pleuritis caused by SARS-CoV-2 infections.

Though rare, COVID-19 patients not only can be asymptomatic but can also have clear radiographic imaging. This was observed in a study done by Guan et al. in the year 2020, showing that there were no radiographic or CT abnormality found in 157 of 877 patients, which is 17.9% with non-severe disease and in 5 of 173 patients, which is 2.9% with severe disease [8]. This case that we have reported above, illustrates how vigilant health care providers should be in dealing with COVID-19 patients. Here, we dealt with a patient whose COVID-19 diagnosis could have been missed effortlessly, had she not been a known direct contact of a COVID-19 positive patient, as not only did she present with a very unusual symptom of this disease, but also had clear radiographic imaging.

## Conclusion

These educational cases along with this case suggests that having the knowledge and being well-informed of these under-recognized wide spectra of rare initial manifestations of this disease, is crucial for the battle against COVID-19. Being heedful and the timely recognition of patients, who present with atypical symptoms of COVID-19 is of paramount importance to avoid misdiagnosis, delay in isolation of the patient, and also in reduction of transmission rate. This will ensure the safety of our health care settings and aid in offering the most promising treatment for our patients.

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