Case Report

COVID-19 presenting as right flank pain in a postpartum woman: A case report

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ABSTRACT

Introduction: Patients with COVID-19 infection may present a wide range of symptoms that make its diagnosis challenging, especially in patients with underlying conditions.

Presentation of case: A 30-year-old postpartum woman presented to the Emergency Department (ED) of Arash Women Hospital with right flank pain. Physical examination revealed tachycardia and decreased sounds in the base of the lung. Chest CT scan demonstrated patchy consolidations in bases of the lungs in favor of COVID-19 infection. The patient underwent pharmacotherapy with Remdesivir, steroid, and interferon beta-1a for eight days and was discharged in a good condition.

Discussion: This study suggests that involvement of lungs’ bases may be associated with gastrointestinal symptoms such as abdominal or flank pain in the COVID-19 patients. It makes the diagnosis difficult in a scenario such as the described patient in our study where there may be other differential diagnoses correlating with the patient’s clinical course.

Conclusion: COVID-19 should be in the differential diagnosis of any patient presenting to ED with relevant complaints. Correct and immediate diagnosis is critical for proper treatment and isolation of patients with COVID-19.

1. Introduction

Since its introduction in 2019, COVID-19 has infected more than 116 million people worldwide. Although it was primarily known as a virus that infects the respiratory system, it affects almost all organs and presents a wide range of signs and symptoms. Fever, headache, myalgia, and fatigue are common among patients with COVID-19 [1]. COVID-19 symptoms in pregnant women are not different from those of non-pregnant patients [2]. However, COVID-19 does not always present with typical symptoms. Organs that their cells express ACE 2 receptors are vulnerable to COVID-19 infection, and COVID-19 may present with renal, ocular, neurological, gastrointestinal, cardiac, musculoskeletal, cutaneous, and renal symptoms [3]. COVID-19 has been associated with gastrointestinal symptoms, including abdominal pain, diarrhea, and vomiting, which may distract the physicians from suitable workup and diagnosis [1]. In this article, we present a case of COVID-19 infection in a postpartum woman with extrapulmonary symptoms who were admitted in an academic setting according to the SCARE guideline [4].

2. Case

Written informed consent was obtained from the patient for publication of this case report and accompanying images. Also, we reported this case report according to the SCARE guideline [4].

The subject was a 30-year-old Iranian primigravida woman in 26th week of gestation who came to our hospital’s emergency department (ED) by herself complaining of a headache. She was a housewife who had a bachelor’s degree. On initial evaluation, she had blood pressure...
gastrointestinal symptoms. In her past medical history, she had gestational diabetes mellitus, gestational hypertension, and gestational hyperthyroidism. She also had a history of appendectomy and breast fibrocystic resection. She mentioned a history of allergic reactions to penicillin.

At the time of admission, her blood pressure was 111/74 mmHg, and her pulse rate was 124 beats per minute. Her respiratory rate was within the normal range, with peripheral oxygen saturation (SpO2) of 97%. She was afebrile at presentation but developed a mild fever during hospitalization, and COVID-19 was highly suspected. Positive RT-PCR test and patchy consolidation of lungs’ bases were suggestive of COVID-19 in the patient. Involvement of base of right lung and improvement of right flank pain after a course of COVID-19 treatment indicated COVID-19 as the source of right flank pain in this patient. The patient was hospitalized for eight days and was discharged with a stable condition with prescribed clindamycin and ciprofloxacin.

In the routine follow-up, the patient did not have any symptoms or complications.

3. Discussion

Persistent abdominal pain is common in postpartum women, with its incidence ranging from 50% to 86%, and is more common among mothers with cesarean delivery. Such pain mostly has a mild intensity, and its intensity decreases over time [5]. Also, cesarean delivery poses a higher risk of complications than vaginal delivery, including infections, thromboembolic events, and surgical wound complications, manifesting as abdominal pain. Several unusual disorders such as ovarian vein thrombosis, mesenteric venous thrombosis, and endometritis may also cause abdominal pain in postpartum women [6]. There are several case reports on the unusual causes of abdominal pain in the postpartum period. Waseem et al. described a multiparous woman with abdominal pain and fever two weeks after cesarean delivery, diagnosed with uterine perforation [6]. Basili et al. reported a postpartum patient admitted to the emergency department with right lower quadrant pain and fever 15 days after the delivery, diagnosed with ovarian vein thrombosis [7]. In this case report, we presented a postpartum woman with right flank pain, which we could not find any possible complication or etiology related to it other than the COVID-19 infection. Our patient had severe flank pain, which is in contrast to Durmus et al.’s findings as they reported that patients with COVID-19 who present with flank pain usually

![Fig. 1](https://example.com/fig1.jpg) Patient’s abdominopelvic CT scan indicating the involvement of the base of right lung.
experience mild to moderate pain [8]. There may be two possible explanations for such findings in patients. First, ACE 2 receptors are expressed in the small intestine, explaining the gastrointestinal symptoms in patients with COVID-19 [9]. Second, patients with pneumonia may present with flank pain [10]. Abolyazid et al. reported three cases of COVID-19 infection presented with predominant abdominal and flank pains. Abdominal CT scans had revealed basal involvement of lungs in these patients as there were ground-glass opacities and patchy areas in the inferior lobes of the lungs [11]. Parambil et al. also reported that a patient with COVID-19 presented with right flank pain associated with consolidations, especially in the right lung [12]. Siegel et al. also reported three COVID-19 patients with gastrointestinal symptoms who had the lungs’ involvement on the CT scan [13]. The studies suggest that lung bases’ involvement may be associated with gastrointestinal symptoms such as abdominal or flank pain in the COVID-19 patients. It makes the diagnosis difficult in a scenario such as the described patient in our study where there may be other differential diagnoses correlating with the patients’ clinical course. A review of the lungs’ bases in the abdominal CT scan may be helpful as it may reveal the lungs’ involvement in patients with COVID-19, and it may guide the physicians to the correct diagnosis.

4. Conclusion

COVID-19 can present with many symptoms, and physicians, especially in the ED, must rule out this infection in any incoming patient at the time of the pandemic.

| Table 1 | Results of the patient’s laboratory tests in her second admission. |
|---------|---------------------------------------------------------------|
|         | Day 1                   | Day 2                   | Day 3                   | Day 4                   | Day 5                   | Day 6                   | Day 7                   |
| WBC (cells/cm³) | 9600                   | 7400                   | 4500                   | 8700                   | –                      | 4500                   | 8000                   |
| RBC (cells/cm³)  | 4060000                | 3560000                | 4160000                | 3950000                | –                      | 4160000                | 4250000                |
| Hemoglobin (mg/dl) | 11.5                   | 10.4                   | 11.7                   | 11.3                   | –                      | 11.7                   | 12.3                   |
| Platelet (cells/cm³) | 316000                 | 366000                 | 418000                 | 510000                 | –                      | 418000                 | 334000                 |
| AST (IU/L)        | 14                     | 48                     | 15                     | 26                     | 22                     | –                      | 20                     |
| ALT (IU/L)        | 12                     | 54                     | 16                     | 34                     | 29                     | –                      | 21                     |
| ESR (mm/h)        | 75                     | 37                     | –                      | –                      | –                      | –                      | –                      |
| CRP (mg/l)        | 20                     | 20                     | –                      | –                      | –                      | –                      | –                      |
| BUN (mg/dl)       | 10                     | 17                     | 10                     | 15                     | –                      | –                      | 13                     |
| Creatinin (mg/dl) | 1                      | 0.8                    | 0.7                    | 0.9                    | –                      | 0.9                    | –                      |
| LDH (IU/L)        | 351                    | –                      | –                      | 367                    | 395                    | –                      | 441                    |
| Ferritin (ng/ml)  | 140                    | –                      | –                      | –                      | –                      | –                      | –                      |
| D-Dimer (mcg/ml)  | 11.52                  | –                      | –                      | –                      | –                      | –                      | –                      |
| Urine analysis    | Blood: 16-18           | WBC: 10-12             | Epithelial cell: 8-10  |                        |                        |                        |                        |
|                  |                       |                        |                        |                        |                        |                        |                        |

| Table 2 | Timeline of events. |
|---------|---------------------|
| Day one | Patient hospitalized due to headache. |
| Day three | Preterm delivery due to resistant hypertension |
| Day five | Neonate passed away. Mother discharged from hospital |
| Day twenty one | Beginning of right flank pain |
| Day twenty five | The patient returned to the hospital due to right flank pain. A nasopharyngeal swab for the COVID-19 RT-PCR test was obtained. Remdesivir, Azithromycin, and Recigen were prescribed for the patient. |
| Day twenty six | Abdominal ultrasound revealed a heterogeneous mass (45 × 19mm) between the right side of the bladder and the fundus of the uterus. The steroid was prescribed for the patient. |
| Day twenty eight | Abdominopelvic CT scan with delayed post-contrast phase revealed the involvement of the bases of both lungs and was otherwise normal. COVID-19 RT-PCR test was positive. |
| Day thirty two | Patient discharged |

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Ethics

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Data availability

All relevant data are reported in the manuscript.

Ethical approval

N/A.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contributions

Conceptualization, Venus Chegini, Reihaneh Hosseini, Victoria Chegini; Data curation, Sara Kasraei, Neda Zarei; Roles/Writing - original draft, Amin Nakhhostin-Ansari, Faezeh Aghajani; Writing - review & editing, All authors.

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1. Name of the registry: |
2. Unique identifying number or registration ID: |
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Venus Chegini.
Declaration of competing interest

Authors have no conflict interest to declare.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.amsu.2021.102770.

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