

Unexpected tendency to bleeding in COVID-19 patients: A case of spontaneous retroperitoneal hematoma

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Abstract

While COVID-19 pandemic has become an enormous and devastating pandemic for today's world, studies on the morbidity of the disease mainly show the disease's progress with pneumonia and thromboembolic pathologies. In this disease with a predisposition to thromboembolism, findings of nontraumatic focused hemorrhages are unexpected. As spontaneous retroperitoneal hematoma is a serious condition with the absence of symptoms, creating a challenge for diagnosis, it should also be considered in COVID-19 which is thought to be predisposed to thromboembolism. Here, a 47-year-old woman with COVID-19 pneumonia diagnosis (diagnosed by computed tomography (CT) scan and approved by nasopharyngeal swab test) is presented with spontaneous retroperitoneal hematoma, and its management is reported. This case highlights the importance of considering both thromboembolic events and bleeding in cases with COVID-19 positivity. The balance between two sides of clotting mechanisms needs to be understood with novel research.

Keywords

Coronavirus disease-19 (COVID-19), pneumonia, retroperitoneal hematoma, thromboembolism

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Introduction

Retroperitoneal hematoma is a radiologically diagnosed rare diagnosis, defined as the bleeding in the retroperitoneal space usually without associated trauma or iatrogenic manipulation. It is usually seen in patients receiving systemic anticoagulation, mostly including Warfarin.¹ Other than anticoagulant therapies and clotting disorders, it has been associated with hematologic diseases, malignancies, trauma, and Evans syndrome.^{2–4} Compared to other areas of bleeding, retroperitoneal hematoma diagnosis can be challenging due to asymptomatic or nonspecifically symptomatic conditions.⁵ Its treatment can be even more challenging, because there are usually other comorbidities that should be taken care of.

While the Coronavirus disease-19 (COVID-19) epidemic is in progress worldwide in 185 countries today, studies on the morbidity of the disease show that the disease progresses with pneumonia and thromboembolic pathologies. In this disease with a predisposition to thromboembolism, findings of focused nontraumatic bleeding are unexpected. This case report shows the management of a young patient with a spontaneous retroperitoneal hemorrhage incidentally diagnosed on the first day of her COVID-19 pneumonia diagnosis.

Case presentation

Chief complaints

A 47-year-old woman was admitted to hospital due to difficult breathing and intermittent cough for 5 days, and abdominal pain for 3 days.

History of present illness

Patient's symptoms started 5 days ago with recurrent episodes of coughing and difficulty in breathing. Abdominal pain began 3 days ago on her left lumbar side, worsening in the last 24 h. She had no discomfort of nausea. She had no

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traumatic history. She had no contact with suspected or diagnosed COVID-19 patients.

History of past illness

She had no history of cardiovascular disease, diabetes, any abdominal operations, or usage of anticoagulant therapies. She was not taking any oral contraceptives.

Physical examination

The patient's heart rate was 106 bpm, respiratory rate was 22 breaths per minute, blood pressure was 110/60 mmHg and oxygen saturation in room air was 95%. Her temperature was 36.9°C, and her Glasgow Coma scale was 15/15 when admitted to the emergency department.⁶ She had moist rales at the end of inspiration. She had no tenderness in abdominal examination, but she felt pain on her left lumbar region. She had no costovertebral angle tenderness, and no dysuria described.

Laboratory examinations

Blood analysis revealed a mild leukocytosis $11 \times 10^9/L$, with lowered lymphocyte count ($0.9 \times 10^9/L$). Her hemoglobin levels were extremely low, with a value of 6.8 g/dL. Prothrombin and partial thromboplastin times were normal, with an INR of 0.94 on the day of admission. The urine analysis, and both renal and liver function blood tests were normal.

Imaging examinations

An initial imaging evaluation with thoracoabdominal CT scan revealed patchy lesions in both lungs, being dominant in right lung (Figure 1), and $12 \times 10 \times 10$ cm retroperitoneal hematoma on the left lumbar region under the kidney, due to spontaneous bleeding (Figure 2). The density of the retroperitoneal appearance was coherent with hematoma, not showing signs of a dense tissue, or tumor.

Final diagnosis

The final diagnosis of the presented case is spontaneous retroperitoneal hematoma due to the secondary clotting side effects of COVID-19 infection.

Outcome and follow-up

Her treatment included favipiravir, and prednisolone, but routine prophylactic anticoagulant treatment to prevent microembolies was still added despite her retroperitoneal hematoma. The reason was that the patient will still get her red blood supply and the risk of microembolic events was tried to be decreased. After she got a transfusion process with

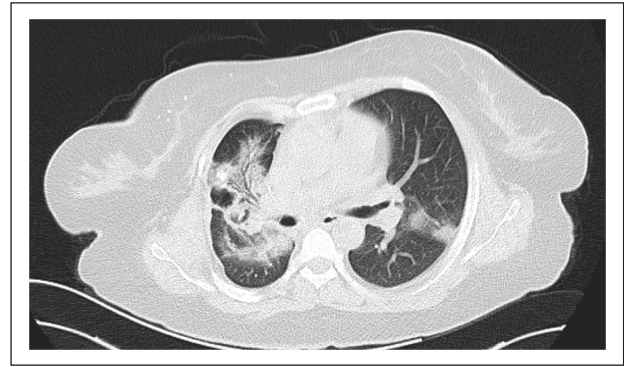


Figure 1. Thoracic CT scan of the patient when admitted to the hospital. The lesions are indicated as highly suspicious for COVID-19.



Figure 2. Abdominal CT scan of the patient at admission. There is a $12 \times 11 \times 8$ cm lesion in the retroperitoneal space. The shape and irregularity of the lesion, and its density are coherent with hematoma.

three units of red blood cells and three units of fresh frozen plasma, repeated laboratory tests revealed hemoglobin levels as 10.2 g/dL. She was monitored for 48 h for close follow-up. Prophylactic antibiotherapy covering both aerobic and anaerobic infections is included in her treatment for the protection of possible secondary infections in retroperitoneal hematoma. After she got 5 days COVID-19 treatment, her control swab tests were negative, and her saturation was 98%. A second thin-section CT is taken for controlling the current situation of the hematoma, which showed stabilization without any enlargement seen. She was discharged in the fifth day for 14 days quarantine at home. Prophylactic antibiotherapy was completed in a week. On her 14th day follow-up session, she had no clinical sign for COVID-19. A follow-up ultrasonography was taken, which revealed that regression was avowed.

In her third month control, the retroperitoneal hematoma was totally regressed.

Discussion

The COVID-19 outbreak is rapidly increasing in the number of cases, deaths, and countries affected. Yet, there is limited data about the virus and its effects, including its modes of transmission, risk factors and morbidities created by the illness, and mortality rate.

COVID-19 is emphasized to be related with many conditions mostly pneumonia. COVID-19, like its close biological models of SARS (severe acute respiratory syndrome) and MERS (Middle East respiratory syndrome), is also known to create a thromboembolic situation in patients, not depending on their ages and comorbidities.⁷ Thus, anticoagulant therapies are usually added to these patients, and this is recommended in international guidelines as well. With this knowledge, prophylactic low molecular weight heparin therapy begins in all patients hospitalized in Turkey.⁸ A CT-imaging was taken due to the sudden onset of abdominal pain on the first hours of hospitalization, by considering possible thromboembolic events rather than retroperitoneal hematoma.⁷ Intravenous contrast could not be given because of her high creatinine levels. Interestingly, a large hematoma was found in the left retroperitoneal space. In this COVID-19 patient, CT would appear to investigate the necrosis-related secondary findings of possible ischemia (e.g. pneumatosis intestinalis or presence of free intra-abdominal gas), and it is unexpected to encounter hemorrhagic symptoms instead of embolism.

COVID-19 pandemic is an inevitable emergency affecting the management of chronic diseases. The theory of rheumatological diseases aggregated by this infection is still ongoing. Nevertheless, it is known that patients with chronic inflammatory diseases such as systemic lupus erythematosus (SLE) have higher incidence of infectious diseases and lower recovery rates in a short period of time, although it has not been proven with certainty.⁹ Although there is no study on rheumatological diseases and COVID-19 coexistence, and no reports of these patients about the tendency to bleed, it is obvious that this phenomenon should be investigated. Our patient had no self or family history of rheumatological diseases, but every patient must be investigated if there is a discordance in clotting mechanisms.

The management principles of spontaneous retroperitoneal hematoma are the same regardless of the reason of spontaneous hematoma. Emergent surgical interventions are avoided except if the patient cannot get stabilized with massive red blood cell replacement and close follow-up.¹⁰ Our patient had a transfusion of three units of red blood cells with concomitant fresh frozen plasma. Her vital signs were followed closely. The radiological imagings during follow-up showed the stabilization of hematoma without any vascular structures to be taken into account. Because of the high possibility of an underlying hematological deficiency, all biochemical parameters should be followed, and close follow-up on clotting times and hemogram values is a must. Still,

securing the clotting mechanism by routine low molecular weight heparin (LMWH) treatment was given to the patient, regardless of the retroperitoneal hematoma.¹¹ Long-term follow-up of the patient with radiological imaging techniques is recommended for patients under conservative treatment.¹²

As stated in many studies in literature, COVID-19 is related to both thrombotic phenomena and predisposition to bleeding. While thrombotic events usually occur in the first week of acute infection, after 10th day of COVID-19, tendency for bleeding mechanisms begins to outweigh.¹³ This case, unusually, presented with hematoma, just after the symptoms began. The unusual situation of tendency for bleeding at the beginning of the infection does not overlap with current knowledge and philosophy of clotting mechanisms behind COVID-19.

To the best of our knowledge, the presented case is the first in the literature describing the presence of a spontaneous retroperitoneal hematoma of a COVID-19 positive patient.¹⁴ The presence of epidemic and the rarity of the presented case are also highlighted by the facts that neither anticoagulant therapy nor traumatic history was existed.

Conclusion

Spontaneous retroperitoneal hematoma is a serious condition with the absence of symptoms, creating a challenge for diagnosis. It should also be considered in COVID-19 patients in whom it is generally thought to be predisposed to thromboembolism. It may present with sudden abdominal pain and anemia, and has to be closely followed up. The mechanisms of COVID-19 in rheumatologically followed patients should be investigated and promptly defined. Standardized processes and strict decisions are needed for COVID-19. Routine prophylaxis against microembolies via LMWH and other protocols must be secured during this catastrophic pandemic.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical approval

Ethical approval to report this case was obtained from University of Health Sciences, Sisli Hamidiye Etfal Research, and Training Hospital Ethics Committee, File Number: 2020-1765.


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Informed consent

Written informed consent was obtained from the patient for her anonymized information to be published in this article.

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