



Case Report

Peritoneal effusion as unusual complication post COVID 19 infection



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ABSTRACT

Introduction: COVID 19 is a new virus appeared in the late of 2019, and spread widely through the world, causing respiratory symptoms and sometimes could cause digestive manifestations.

Case presentation: We reported a case of a 72 years old woman presented with a complaint of dry cough, dyspnea and swollen abdomen, which she diagnosed with COVID19 and her medical history showed type 2 diabetes mellitus and acute kidney injury one month prior to her presentation. CT-abdomen showed Ascites and slightly hepatomegaly then we performed prednisolone antibiotics medication. After a week the Ascites decreased and her condition was good and stable.

Discussion: Few similar cases have been reported in the literature as case reports, but our article reports the first case report from Syria, which may increase the clinical awareness towards rare complications of COVID19 infection among Syrian clinical doctors, especially pulmonologists.

Conclusion: The peritoneal effusion consider as a rare digestive manifestation of COVID19 that Clinical doctors should take aware off.

1. Introduction

SARS COV-19 is a new virus appeared in Wuhan (China) in December 2019 and it was widely spreading to other countries. The current statistics of the World Health Organization indicate that there are 476,374,234 confirmed cases with COVID19 and 6,108,976 deaths around the world [1,2]. The respiratory symptoms range from asymptomatic to severe conditions, which most common symptoms are dry cough, high fever, loss of taste and smell, and less common symptoms are vomiting, diarrhea, headache, myalgia, nausea and sputum production [3]. Advanced affected cases of COVID19 cause many complications such as ventilator dependence, oxygen dependence and fibrotic lung disease. Other complications in cardiovascular system may occur such as palpitations and postural tachycardia syndrome, and haematological complications include thrombotic abnormalities [4]. Although digestive complications post COVID19 infection are not extremely common, but many digestive manifestations were reported in COVID19 patients such as nausea, vomiting, diarrhea, anorexia and liver injury [5,

6]. Herein, we report a rare case of peritoneal effusion due to the infection of COVID-19, which clinical doctors should investigate the existence of ascites when finding COVID19 patient with digestive symptoms.

The manuscript has been reported in line with the SCARE 2020 criteria [15].

2. Case presentation

A 72 year old woman presented at the emergency department with a complaint of dry cough, dyspnea and swollen abdomen since one week ago. Her medical history showed a second type of diabetes and was diagnosed of acute kidney injury one month prior to her presentation. By clinical examination we found that the patient appeared pale, lethargic, tachypnea. Blood pressure was 130/70, Heart rate: 120 B/M, Oxygen saturation was 80% and the temperature was 37, 5 C. Chest auscultation showed coarse crackles. The abdomen was globose and distended but not tense. The computed tomography chest showed multi ground glass

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sites on both lungs. Laboratory testing identified anemia (Hb 10.3 g/dL, WBC 14000/mm³) with lymphopenia, increased transaminases: alanine aminotransferase (ALT) (54 U/L – RV 17-41 U/L), and aspartate aminotransferase (AST) (61 U/L – RV < 40 U/L) (CRP107 mg/l – RV 0-10 g/dL), (INR = 1.1), (IL-6 = 7.1 pg/ml- RV < 7pg/ml), (D-dimer = 1.1 ng/ml-RV<0.5ng/ml), but the other tests were within normal limits. The patient was admitted in the Covid-19 intensive care unit. Covid-19 infection was confirmed by the positive PCR test. The abdominal CT scan showed ascites, slightly liver enlargement without any mass (Figs. 1 and 2). The spleen and kidneys were normal. 10 ml of ascites was punctured which was cloudy and yellow. The ascites sample showed a transudate ascites with SAAG = 2.3, WBC = 600/mm. (Neutrophil = 90%, Lymphocytes = 10%). HBSAG, and HCV antibodies tests were performed which were negative, and the Bro BNP was normal. After admission, we put the patient on oxygen supply and symptomatic Covid-19 medicines from prednisolone antibiotics. After five days of hospital admission, the patient's condition improved and her oxygen saturation was 95%, and the ascites was decreased. On the seventh day, an abdominal ultrasound was performed which showed no signs of free fluid in the peritoneum. The patient was followed up to complete her COVID-19 treatment course, and she was discharged from the hospital in a good condition.

3. Discussion

Our paper presented unusual complications in the COVID-19 patient, where the abdomen was globose and distended with no tension. Chest computed tomography revealed multi-ground glass formations in both lungs. In addition, CT-abdomen showed S ascites and slightly hepatomegaly. SARS-CoV-2 excretion pathomechanisms are unclear, and there is no reliable information on viral load in different bodily compartments and fluids at different illness stages. Several studies have reported the presence of SARS-CoV-2 RNA in the feces of infected people, but it was not associated with gastrointestinal symptoms. However, COVID-19 utilizes the angiotensin-converting enzyme 2 (ACE2) receptors to infiltrate human cells. The (ACE2) receptors are demonstrated in a wide range of human cells, such as macrophages. Furthermore, the mechanism of the peritoneal effusion due to COVID-19 infection is not clear enough. However, the proposed hypothesis is that the macrophages cells which have the (ACE2) receptor can be affected by the virus. Thus, the macrophages, which are also present in the peritoneal fluid, may facilitate the transmission of the virus through tissues, affect the peritoneum, and causes the peritoneal effusion [7–9]. According to Federico Cocolini et al. [10], a COVID19 78 years-old patient came to the hospital for

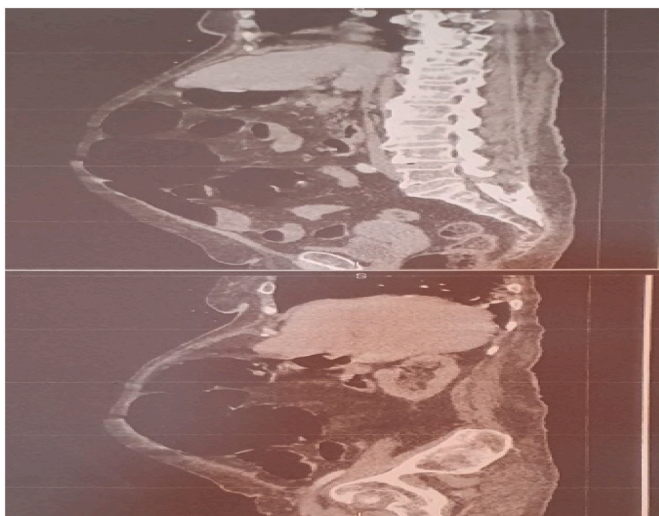


Fig. 1. Longitudinal computed tomography image showing clear ascites in the peritoneum.

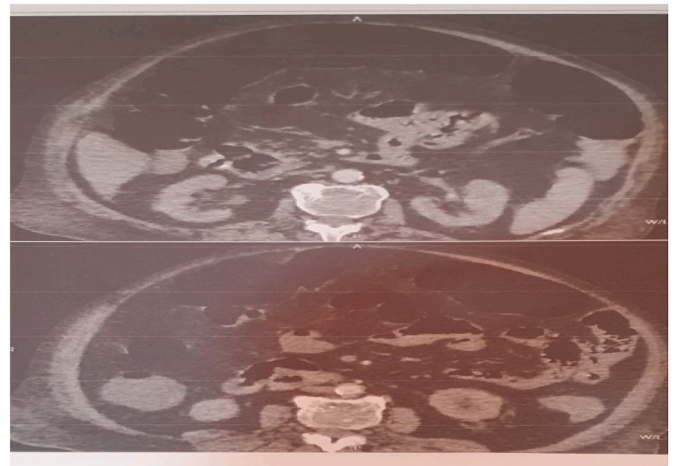


Fig. 2. A transverse computed tomography image showing the presence of a peritoneal effusion.

abdominal pain associated to alteration of the alvius, digestive manifestations tending to intestinal occlusion. The O₂ saturation was 92% with normal another vital signs. His family history consists of arterial hypertension, diabetes mellitus, atrial fibrillation, mild chronic renal insufficiency, asymptomatic abdominal aortic aneurysm. Addition Thoracoabdominal computed tomography scan showed bilateral pneumonia and intestinal occlusion due to small bowel volvulus with no signs of gut ischemia. The laparotomy showed free reactive clear fluid. Neither perforation nor bowel ischemia was present. According to A Barberis et al. [11], a 71-year-old woman presented to the hospital with Covid-19 pneumonia. The patient showed multiple episodes of intestinal bleeding, resulting hypotension and she needed blood transfusions. She underwent a colonoscopy which showed a very severe inflammation associated with pseudopolyps, ulcerations and diffuse bleeding, and after that she developed hemorrhagic shock with anemia. The patient conducted a subtotal colectomy with terminal ileostomy surgery. After a brief improvement in the general clinical condition, the patient progressively deteriorated until her death on the seventh postoperative day. According to Rezzan Eren Sadioglu et al. [12], a 28-year old male with covid-19 and end-stage renal disease, on continuous ambulatory peritoneal dialysis, presented with severe chest pain and dyspnea at rest. Chest X-ray showed bilateral pleural effusions when tested in the laboratory there was a high glucose concentration, suggesting a pleuro-peritoneal leak. Bilateral pleuro-peritoneal leaks were confirmed by nuclear medicine imaging. A repeat chest X-ray showed a circular pacification in the left upper zone. He was intubated, ventilated and a right sided chest drain inserted but he demised post cardiopulmonary arrest. The digestive manifestation can appear in the absence of respiratory symptoms when there are high expression levels of angiotensin-converting enzyme 2 (ACE2) receptor in the intestines and peritoneum [13]. Gastrointestinal symptoms often misdiagnosed because they appear in the early stages of the disease and are self-limiting, that making it difficult to link them to a COVID-19 diagnosis [14]. In our paper, we showed a rarer manifestation of COVID19, where it caused the peritoneal effusion without any other digestive symptoms.

4. Conclusion

Peritoneal effusion considers a rare digestive manifestation of COVID19. Clinical doctors should preform accurate investigations of the intestinal system in COVID19 patients, especially if there are digestive symptoms such as ascites or peritoneal effusion.

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Ethical approval

N/A.

Author statement

All authors have participated in writing and reviewing the manuscript.

All authors have accepted on the final draft of the manuscript.

Registration of research studies

Not applicable.

Consent for publication

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.

Guarantor

Haidara Bohsas.

Declaration of competing interest

All authors declare no conflict of interest.

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