

Case Report

Abdominal emergency related to retro and intraperitoneal lesions caused by COVID-19

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ABSTRACT

Digestive manifestations accompanying or preceding respiratory symptoms of coronavirus disease (COVID-19) caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) are frequent and appears to be associated with its most severe forms. In contrast, isolated digestive involvement in covid-19 is rare and misdiagnosed. It was found that nausea/vomiting, diarrhea, abdominal pain and loss of appetite are the main recognized digestive disorders in patients infected by SARS-COV-2. Acute abdomen with occlusive syndrome has never been reported in the literature to our knowledge. We report the case of a 60-year-old woman who was presented with an occlusive syndrome related to retro and intraperitoneal lesions caused by Covid-19 infection without any respiratory manifestations. She underwent an emergency surgery. The paucity of data about this unusual clinical presentation posed a serious diagnostic and therapeutic challenge.

Keywords: COVID-19 infection, Emergency, Retroperitoneal hemorrhage, Acute abdomen, Occlusive syndrome

INTRODUCTION

Intra and retroperitoneal lesions caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are infrequent unlike respiratory manifestations.¹ Despite the emergence of cases of digestive involvement during the coronavirus disease 2019 (COVID-19) pandemic and the appearance of some surgical abdomen-like presentations.² No case of occlusive syndrome secondary to mesenteric and retroperitoneal hemorrhage has been reported in the literature. Authors report an unusual case with a review of literature.

CASE REPORT

A 60-year-old woman without significant pathological history was admitted in emergency for management of an

acute abdomen. She reports an intestinal obstruction syndrome for 6 days with moderate fever. Physical examination found the patient in a quite good general condition, hemodynamically and respiratory stable without any respiratory signs, fever to 38°C. The abdomen was distended with generalized defense on palpation. Empty rectum on digital rectal examination.

The level of C-Reactive Protein (CRP) was elevated to 320 mg/l (normal up to 5 mg/l), Lactate dehydrogenase was elevated to 950 UI/l (normal up to 240 UI/l), the lymphocytes level was decreased to 540 /UI (normal more than 800/UI), and the other laboratory parameters were normal. The abdominal CT scan showed a stenosing circumferential parietal thickening of the ascending colon with moderate abundance ascites and grelic hydroaeric levels (Figure 1).

open surgical exploration revealed brown moderate intraperitoneal effusion, several tight right colonic adhesions and important infiltration of the ascending colon, as well as hemorrhagic suffusion and extensive retroperitoneal infiltration (reminiscent of necrotizing fasciitis) spilling into the mesocolon with peritoneal involvement in the form of cytosteatonecrosis lesions (Figure 2). the appendix, the rest of the digestive tract, the liver and the pancreas were normal. In fact, colonic adhesion bands were the main cause of intestinal obstruction.

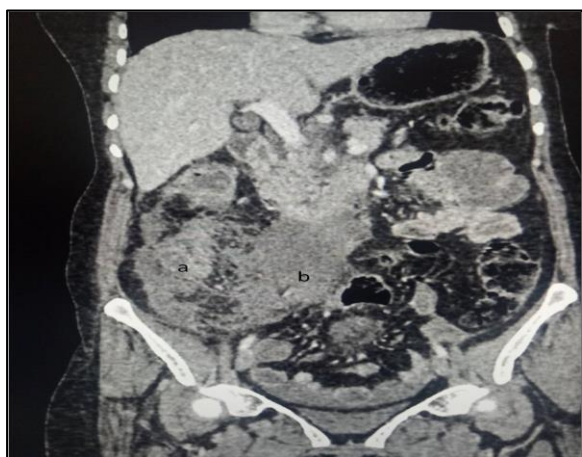


Figure 1: Emergency CT scan showing a stenosing thickening of the right colon (a) with a mesenteric hemorrhage (b) of a patient with COVID-19.



Figure 2: Intraoperative view showing mesenteric hemorrhage with peritoneal cytosteatonecrosis-like lesions.

A laborious adhesiolysis and a large retroperitoneal drainage were performed (odorless brown liquid) after taking several samples and biopsies. The bacteriological analysis of the sample fluid was sterile. The histological examination of the biopsies was non-specific and showed a subacute inflammatory of retroperitoneal fatty tissue with presence of a fibrino-leukocyte coating, vascular congestion and hemorrhagic suffusions. Postoperatively, faced to this unusual presentation we realised a chest CT scan and PCR Covid test. The PCR test was positive and

the lungs were normal. All the etiological investigation was negative except for the COVID-19 infection which suggested that the SARS-Cov-2 virus remains the only explanation for the retroperitoneal and digestive damage observed. After a multidisciplinary meeting including surgeon, gastroenterologist, and infectious expert, the patient continued the probabilistic parenteral antibiotic therapy started preoperatively based on ciproxin and amoxicillin/ clavulinac acid. Anticoagulation therapy and short corticosteroid therapy were added postoperatively.

The patient had an uneventful postoperative recovery with resumption of transit on the third day and she was discharged on the tenth day. The total colonoscopy at three weeks was without abnormalities with normalization of all laboratory disorders including the PCR test of COVID-19.

DISCUSSION

Digestive infection of COVID-19 is now well documented with polymorphous symptomatology which may precede the onset of respiratory symptoms.³ Isolated digestive involvement is rare, only about 3% of patients present with enteric signs without respiratory involvement.^{4,5} The clinical presentation mainly includes abdominal pain, decreased appetite, diarrhea, nausea/vomiting and rarely GI bleeding. These signs are more present in patients with severe illness.^{6,7} As for liver injury, it often boils down to a minimal and transient cytolysis enzymes movement which does not require any specific treatment.⁸ However the acute hepatitis, acute pancreatitis and acute cholecystitis due to SARS CoV 2 virus has been reported.⁹

The significant digestive tract infection can be explained by the high expression of the angiotensin-converting enzyme 2 (ACE2) in gastrointestinal (GI) epithelial cells, as well as in cholangiocytes and hepatocytes. It has been proved that the expression of ACE2 messenger RNA and protein in the GI tract is approximately 100 times higher than in the respiratory system. In fact, ACE 2 is involved in the intracellular penetration of SARS-Cov2 virus leading to infection.^{1,10} The severity of the disease is proportional to the ability of the virus to bind to ACE 2 receptors on the cell surface.^{11,12} The risk of vascular bleeding and that of tissue ischemia are linked to viral endothelial cells infection which can cause endotheliitis, disseminated intravascular coagulation and hypercoagulability.^{2,13,14}

In our case, the vascular dysfunction with inflammatory repercussions on the colic mucosa, as well as the cytokine storm, are the most probable underlying pathophysiological mechanisms which presumably reflects the interaction of several factors in the genesis of peritoneal and retroperitoneal lesions observed.

Importantly, elevated C-reactive protein (CRP) and lactate dehydrogenase (LDH) values are the most common laboratory abnormalities closely associated with serious COVID-19 infections and can predict the disease severity.

Furthermore, lymphocytopenia and elevated serum ferritin may support the diagnosis.^{15,16} Abdominal with basal thoracic computed tomography (CT) scan is important for emergency diagnosis, but the use of abdominal CT angiography focusing on the mesenteric and renal vessels may have more benefits.¹⁷

At present, there is no specific treatment for digestive symptoms of COVID-19. Antiviral treatments such as lopinavir and ritonavir have been administered to hospitalized patients with severe form of COVID-19.¹⁸ Some symptomatic treatments were combined with other drug for COVID-19 such as chloroquine, hydroxychloroquine and azithromycin.⁵ Although controversial, broad-spectrum antibiotic therapy has been used without evidence of efficacy. However, it is recommended to preserve the intestinal microecology, as well as to prevent secondary infections by using probiotics.¹⁹

Finally, it would be particularly interesting to remind surgeons in the COVID-19 era that more attention must be paid to the values of CRP, LDH (highs) and lymphocytes (low). They should not hesitate to request and re-request COVID-19 test in front of any atypical acute abdominal presentation. Likewise amid the current pandemic, abdominal CT angiography can be of great importance to avoid unnecessary surgery and to not miss real surgical cases.

CONCLUSION

The gastrointestinal symptoms of COVID-19 initially described as rare, are reported with increasing frequency or even in the foreground. The retroperitoneal hemorrhage due to SARS-Cov2 infection with digestive involvement is rare and can mimic the clinical picture of an acute abdomen or lead to an intestinal obstruction. Conservative treatment should be the rule in the absence of ischemia or perforation of the digestive tract wall, but the bands of adhesions can lead to an adhesiolysis surgery.

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