



Colitis as a Sole Presentation of SARS-CoV-2 Infection: Case Report

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Abstract

On March 11, 2020, COVID-19 was declared as a pandemic by World Health Organization. Criteria for identifying persons under investigation for SARS-CoV-2 infection by Centers for Disease Control and Prevention remain focusing on fever and respiratory symptoms. We report a case of COVID-19 patient who presented with colitis alone.

Keywords COVID-19 · SARS-CoV-2 infection · Colitis

Introduction

Coronavirus Disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has emerged in Wuhan city, China since December 2019. COVID-19 has rapidly spread worldwide and was declared as a pandemic by World Health Organization on March 11, 2020 [1]. Persons with underlying diabetes mellitus, chronic lung disease, and cardiovascular disease appear to be at higher risk for severe COVID-19-associated disease [2]. Patients with COVID-19 typically present with fever, cough, and myalgia [3]. Digestive symptoms including diarrhea, nausea, and vomiting have been reported as clinical presentations of the patients infected with SARS-CoV-2 but were less common [3].

shortness of breath, nausea, vomiting, severe abdominal pain, and bloody bowel movements. Patient had not traveled outside Houston area, neither had he contacted with anyone known to have COVID-19.

Clinical Findings

Physical examination revealed temperature of 101.1 °F, blood pressure of 184/109 mmHg, pulse of 143 beats per minute, respiratory rate of 16 breaths per minutes, and oxygen saturation of 98% on ambient air. Lung auscultation was clear. Abdominal examination revealed distended abdomen and generalized tenderness to palpation. Bright red blood was present on bed sheet.

Case Presentation

Patient Information

A 56-year-old man with a history of hypertension, coronary artery disease required coronary artery bypass grafting, and ascending aortic aneurysm presented to our emergency department in Houston, Texas with a 2-day history of fever,

Diagnostic Assessment

Blood tests on presentation (Table 1) revealed leukocytosis, lymphopenia, thrombocytopenia, elevated C-reactive protein, and lactic acid. Chest X-ray (CXR) showed bibasilar subsegmental atelectasis (Fig. 1). Computerized tomography (CT) scan of the chest, abdomen, and pelvic with contrast revealed no pulmonary airspace disease but demonstrated wall thickening of the ascending, transverse, and descending colon which was compatible with colitis (Fig. 2). Blood cultures, HIV serology, and acute viral hepatitis serology were negative. Stool gastrointestinal pathogen panel polymerase chain reaction (PCR) was negative. Given an ongoing COVID-19 outbreak in the community, nasopharyngeal swab was obtained for COVID-19 qualitative PCR test, which was reported as detected on the day of admission.

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Table 1 Laboratory findings during hospitalization

Day	Day of admission	1	2	3	4	5	6	7
Labs								
WBC (k/ μ L)	12.8	12	6.6	5.8	4.6	4.3	4.8	4.7
Neutrophils (cells/ μ L)	11,264	9889	4745	3991	2742	2524	2405	2385
Lymphocytes (cells/ μ L)	769	1184	1009	871	969	872	1120	1211
Hemoglobin (g/dL)	16	15.8	12.2	13.9	11.2	11.1	12.1	10.5
Hematocrit (%)	44.8	43.8	36.5	40.5	32.8	33	35.6	31.9
Platelet (k/ μ L)	133	105	89	114	136	157	204	233
ESR (mm/h) 6								
CRP (mg/dL)	8.52	21.47	24.95	15.19	11.45	7.37	5.91	
AST (U/L)	67	38	24	25	30	32	35	29
ALT (U/L)	82	54	35	33	29	31	37	31
LDH (U/L)	265	196	141	171	149	140	154	
Lactic acid (mmol/L)	2.9	1.6	1	1.5				
Ferritin (ng/mL)		287			237			
Interleukin-6 (pg/mL)	24							
Troponin (ng/mL)	<0.006	0.012						
D-dimer (μ g/mL)	4.14							
COVID-19 PCR	Detected						Not-detected	Not-detected

Timeline and Therapeutic Intervention

On hospital day 2, patient had persistent abdominal pain and bloody diarrhea with no respiratory symptom. His laboratory findings during hospitalization were showed in Table 1. His hemoglobin level dropped and he developed worsening thrombocytopenia and elevated CRP. Repeat CXR showed no pulmonary infiltrate. Enteral hydroxychloroquine 800 mg once followed by 400 mg daily in combination with ribavirin 400 mg three times a day were initiated.



Fig. 1 Chest X-ray showed subsegmental bibasilar atelectasis

Follow-Up and Outcomes

His abdominal pain improved and bloody diarrhea stopped within the next 48 h. His hemoglobin and hematocrit had been stable. Therefore, endoscopic examination was not performed during this admission. On hospital day 5, CT angiogram of abdomen and pelvic with intravenous contrast was performed



Fig. 2 CT abdomen and pelvic with contrast showed wall thickening of the ascending, transverse, and descending colon with mild pericolic edema

which did not reveal evidence of vascular abnormality but demonstrated improvement of colitis. His two sets of nasopharyngeal swabs collected for COVID-19 PCR were not detected on hospital day 6 and 7 consecutively. The patient was discharged on hospital day 7 after he completed a 5-day course of hydroxychloroquine and ribavirin with a satisfactory response in both clinical and laboratory findings.

Discussion

SARS-CoV-2 infection can uncommonly cause digestive symptoms [4] as the viruses bind to their target cells through angiotensin-converting enzyme 2 (ACE2) which are constitutively expressed by epithelial cells of the lung, kidney, blood vessels, and also intestine particularly terminal ileum and colon [5]. Fecal-oral route could potentially be another route of transmission [6] as SARS-CoV-2 viral nucleic acid was detected in stool of patients with COVID-19 [7, 8]. Sub-group of COVID-19 patients with mild disease could present with digestive symptoms alone and be more likely to test positive for COVID-19 PCR in the stool [9].

Bloody diarrhea was reported as a clinical manifestation of COVID-19 in a patient with underlying inflammatory bowel disease (IBD) [10]. Carvalho et al. has reported a case of SARS-CoV-2 gastrointestinal infection in a patient without underlying IBD who initially presented with bloody diarrhea and subsequently developed pneumonia after hospitalization [11]. The patient was not promptly placed on SARS-CoV-2 isolation precautions and the diagnosis was not made until day 4 of hospitalization as the patient did not initially meet criteria for identifying persons under investigation (PUI) for SARS-CoV-2 infection by Centers for Disease Control and Prevention.

Limitations of our study are that the diagnosis was based on a clinical and laboratory findings as well as the clinical response of the patient. The diagnosis of gastrointestinal COVID-19 could be cumbersome in various institutes since stool study for SARS-CoV-2 PCR was not routinely performed or validated in their laboratory. Besides, endoscopic procedures are aerosol generating which could result in risk of COVID-19 transmission to healthcare personnel. Although histological examination of colon and rectal biopsies did not reveal any pathognomonic finding [11], the endoscopic examination would still be warranted to eliminate other potential etiologies.

To the best of our knowledge, this is the first report of COVID-19 patient presenting with colitis alone with no concomitant pneumonia. This report may promote physician awareness of extra-respiratory presentation of COVID-19 and emphasize clinical significance of more widely and rapidly testing SARS-CoV-2 PCR in fecal sample in patients

presenting with gastrointestinal symptoms alone due to unexplained etiology during the COVID-19 pandemic.

Compliance with Ethical Standards

Conflict of Interest The author declares that she has no conflict of interest.

Ethics Approval and Consent to Participate Informed consent was unable to be obtained because the patient could not be traced after hospital discharge.

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