

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

journal homepage: [www.elsevier.com/locate/mjafi](http://www.elsevier.com/locate/mjafi)

## Case Report

# Overt hematochezia : A rare gastrointestinal presentation in patients with corona virus disease 2019



Mohammad Darvishi <sup>a</sup>, Hamze Shahali <sup>b,\*</sup>

<sup>a</sup> Associate Professor, Aerospace & Sub-Aquatic Medical Faculty, Aja University of Medical Sciences, Tehran, Iran

<sup>b</sup> Assistant Professor, Aerospace & Sub-Aquatic Medical Faculty, Aja University of Medical Sciences, Tehran, Iran

## ARTICLE INFO

## Article history:

Received 26 November 2020

Accepted 15 April 2021

## Keywords:

COVID-19

SARS-CoV-2

Dysentery

Hematochezia

CO-RADS SCORE

## ABSTRACT

World health care systems are affected by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic and its associated disease, coronavirus disease 2019 (COVID-19). This new human pathogen mostly affects the respiratory system, but various extrapulmonary pathologies have been reported in the literature. It seems that the gastrointestinal system is one of the target organs for SARS-CoV-2. Diarrhea as a long-term bowel symptom is not rare, although its occurrence is not as high as that of fever and cough.

© 2021 Director General, Armed Forces Medical Services. Published by Elsevier, a division of RELX India Pvt. Ltd. All rights reserved.

## Introduction

Coronavirus disease 2019 (COVID-19), which is caused by an RNA beta coronavirus (SARS-CoV-2), is a new human pathogen that first started in Asia and rapidly became a pandemic. Currently, the world health care systems have been plagued by a rapidly transmitted virus with no specific treatment. It mostly affects the respiratory system, ranging from mild flu-like symptoms to severe acute respiratory syndrome (SARS). However, extra respiratory multisystemic involvement (such as neurologic, hematologic, cardiac, and gastrointestinal) has also been reported.<sup>1–5</sup> Efficient personnel is the most important asset of the armed forces. Training experienced military pilots require a lot of resources and hence this manpower needs to be conserved well.<sup>6</sup>

## Case report

A 41-year-old male military F-4 pilot who had flu-like syndrome for 2 days as referred to the emergency ward with gastrointestinal (GIT) symptoms (nausea, vomiting, abdominal cramps, and diarrhea) of 24 h duration. He denied any tobacco or drug use, high-risk behaviors, or any other medical history. He had close contact with his teammate, who had a positive reverse transcription polymerase chain reaction (RT-PCR) test for SARS-CoV-2. His vital signs included an oral temperature of 38.5°C, blood pressure of 100/55 mm Hg, heart rate of 121 beats per minute, respiratory rate of 25 breaths per minute, and oxygen saturation of 82%. Significant findings of laboratory assessments for COVID-19 are shown in [Table 1](#). Clinical features, computed tomography (CT) scan findings of

\* Corresponding author.

E-mail address: [hamze.shahali@ajaums.ac.ir](mailto:hamze.shahali@ajaums.ac.ir) (H. Shahali).

<https://doi.org/10.1016/j.mjafi.2021.04.004>

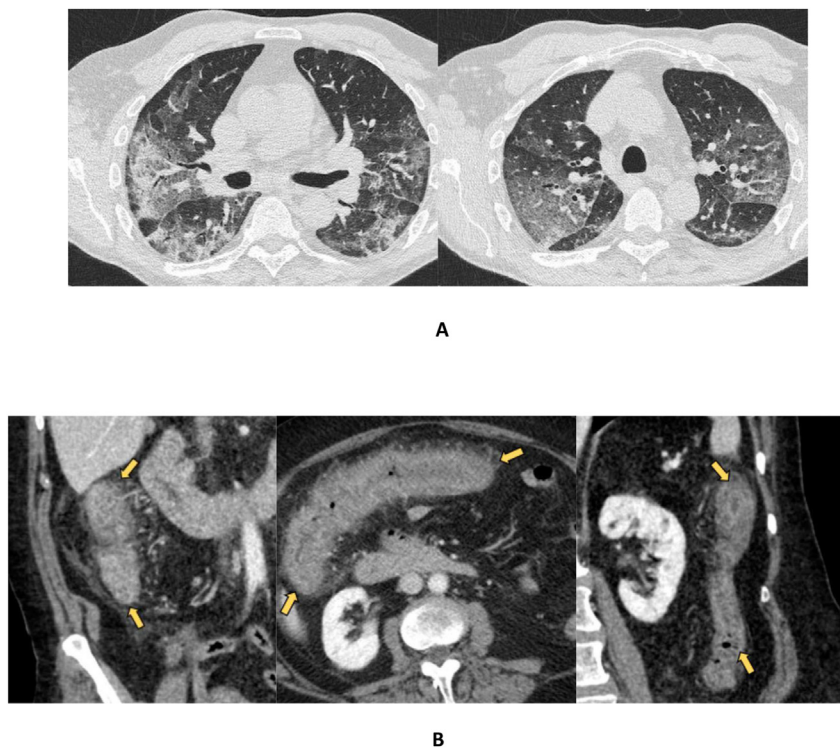
0377-1237/© 2021 Director General, Armed Forces Medical Services. Published by Elsevier, a division of RELX India Pvt. Ltd. All rights reserved.

**Table 1 – Significant laboratory results.**

Laboratory tests		Results	Reference range
RT-PCR tests for SARS-CoV-2	Rectal swabs Nasopharyngeal swabs	Positive	Negative
Hematology		White Blood Cell = 11,400/Cumm Lymphocyte = 7% PMN = 82% CD4+ T-lymphocyte cell count = 1050/ mm <sup>3</sup> Red blood cell = 4.46 Mil/Cumm Hemoglobin = 12.8 gr/dL Hematocrit = 37.9% MCV = 85.1 fl MCH = 28.6 pg MCHC = 33.6 gr/dL RDW = 13.8% Band = 3% Platelet = 251,000/Cumm TIBC = 428 g/dL Ferritin = 100 ng/mL Iron (Fe) = 95 g/dL	3500–10,000 – 500–1500 3.9–5.5 12–16 34.7–46.7 81–100 27–34 31.5–35.7 11.6–14.4 – 150,000–450,000 230–440 20–250 40–120
Biochemistry		FBS = 75 mg/dL BUN = 23 mg/dL Creatinine = 1 mg/dL Alkaline phosphatase = 55 U/L LDH = 246 U/L AST = 19 IU/L ALT = 14 IU/L Bilirubin total = 0.2 mg/dL Bilirubin direct = 0.1 mg/dL Potassium = 3.2 mmol/L Sodium = 128 mEq/L Magnesium = 0.80 mmol/L Calcium = 8.4 mg/dL PaO <sub>2</sub> = 82 mm Hg	70–99 7–20 0.84–1.21 35–104 135–214 5–32 5–33 0.3–1 0–0.3 3.6–5.2 135–145 0.85–1.10 8.6–10.3 80–100
Blood culture (in three times)		No growth	No growth after 72 h
Serology		CRP = 18.8 mg/L ESR = 15 mm AFP = 3.1 IU/mL CEA = 2.2 IU/mL Legionella urine antigen was negative Negative HIV antibody	Up to 8 2–20 0–4 Up to 4.7 Negative Negative
Stool examination	Macroscopic	Color = bloody Consistency = watery PH = 4.85 Mucus = present Blood = present	– Well formed 5–8 Absent Absent
	Microscopic	Epithelial cells = 3–4/hpf WBC = 30–40/hpf RBC = 35–45/hpf Negative for <i>Entamoeba histolytica</i> , Giardia, ova, cyst, or parasites	1–2 1–2 Absent Not found
Stool culture		Negative for <i>Campylobacter</i> , <i>Salmonella</i> , <i>Shigella</i> , <i>Escherichia coli</i> , <i>Yersinia</i> , and <i>Clostridium difficile</i>	No growth after 72 h
Stool calprotectin		>1000 µg/g	10–59 years: up to 5

the chest, and a positive result for nasopharyngeal swabs RT-PCR test for SARS-CoV-2 was evidence FOR recent COVID-19 pneumonia with CO-RADS SCORE 6 (Fig. 1-A). Bronchoscopic bronchoalveolar lavage did not show a cluster of *P.carinii* cysts or trophozoites on methenamine silver staining. The patient clinical profile and characteristics of diarrhea are summarized in Table 2. He was admitted to the intensive care unit (ICU) and received standard medication and intensive

care based on medications and therapeutic interventions (Table 3). Initially, ceftriaxone, metronidazole, and azithromycin were prescribed for him, but with a negative stool culture response, azithromycin and metronidazole were discontinued. After 9 days from the start of the ICU care, his pneumonia was satisfactorily controlled (based on the progressive improvement evident in serial chest CT scans and oxygen saturation of 90%). However, mild bloody and mucoid



**Fig. 1 – (A) Axial chest CT scans represented COVID-19 pneumonia with CO-RADS SCORE 6. (B) Intravenous contrast-enhanced CT scan of the abdomen and pelvis. Axial and coronal planes showed severe global colonic inflammation with sigmoid colon involvement which characterized by circumferential wall thickening, mural hyper enhancement, mesenteric hyper vascularity, and pericolic fat stranding (arrows).**

**Table 2 – Defecations specification of patient.**

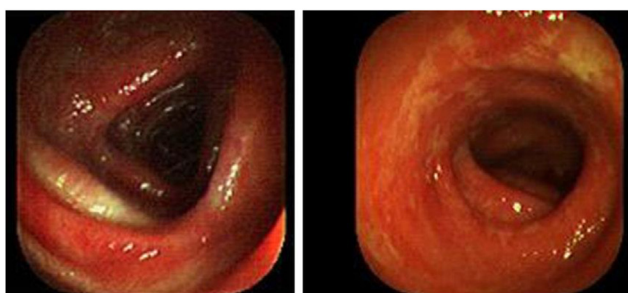
Duration	Frequency	Stool form	Relative volume (for each defecation)	Abdominal cramps
First day	1–2 times a day	Watery	100–200 mL	Non
Second and third days	2–3 times a day	Watery, bloody, and mucoid	150–250 mL	Moderate
Fourth and fifth days	1–2 times a day	Overt hematochezia	50–100 mL	Severe
Fifth to twentieth days	1–3 times a day	Semi formed, bloody, and mucoid	100–200 mL	Mild

diarrhea continued. CT scan with intravenous contrast of his abdomen and pelvis showed severe colonic inflammation, which was most pronounced in the ascending, transverse, and descending colon but was also apparent in the sigmoid colon (Fig. 1B). With suspicion of noninfective causes (such as inflammatory bowel disease [IBD]), colonoscopy and biopsy were requested, and only diffused inflammation and patchy erythema of the colonic mucosa were observed with no evidence of pseudomembranous or Cytomegalovirus (CMV) colitis (Fig. 2). Microscopic findings showed infiltration of numerous plasma cells, lymphocytes, interstitial edema, and congestion in the lamina propria indicating viral colitis. Because we did not see morphological features of CMV colitis, we did not request serum CMV IgM and IgG antibodies and CMV DNA test (PCR test; Fig. 3A). Also, his rectal swabs sampling was positive for the RT-PCR test for SARS-CoV-2. With

the clinical judgment of possible COVID-19 GIT complication, he was referred to the COVID-19 ward. Ceftriaxone, levofloxacin, chloroquine, favipiravir, methylprednisolone, and N-acetylcysteine were discontinued. After 11 days of admission to the COVID-19 ward, he was discharged with satisfactory clinical condition with the recommendation for 2 weeks of home rest. On follow-up at Aeromedical Center, his general condition was good, but he complained of weakness, occasional abdominal cramps, and some loose stools. He had negative nasopharyngeal and rectal swab and RT-PCR tests for SARS-CoV-2, significant recovery in the control chest CT scan, and oxygen saturation of 93%. The results of renewed stool examination and colonoscopy were normal. Repeat biopsy revealed only a few infiltrations of lymphocytes in the lamina propria (Fig. 3B). Three months later, his symptoms

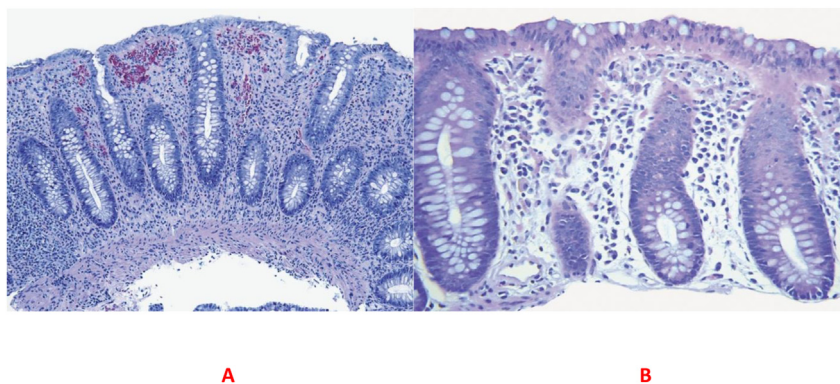
**Table 3 – Medications and therapeutic interventions.**

Antibacterial therapy	Antiviral therapy	Oxygen therapy	Ventilation support	Mechanical ventilation	ICU care	Conservative and adjunctive treatments
Ceftriaxone Levofloxacin Chloroquine	Favipiravir	Yes	Reservoir oxygen and non-rebreather face mask	No	Yes	Oral and IV rehydration Electrolytes replacement Methylprednisolone Scopolamine and dimenhydrinate Famotidine and loperamide Promethazine hydrochloride N-acetylcysteine Vitamins C, D, E, and A Zinc and selenium



**Fig. 2 – Diffused inflammation and patchy erythema of the colonic mucosa.**

Instead, chronic diarrhea lasting more than 4 weeks is mainly caused by noninfectious reasons (such as malabsorption, IBD, and drugs). Treatments depend on the duration and etiology. Common management for both forms is replacing fluid and electrolytes loss via oral rehydration (with diluted fruit juice, Pedialyte, or Gatorade) or intravenous fluid administration. A low-fiber diet (bananas, toast, oatmeal, white rice, yogurt, and soup) may help make stool firmer. Antidiarrheal therapy (such as antisecretory or antimotility agents) is contraindicated in adults with bloody diarrhea (dysentery) or high fever because they can worsen severe intestinal infections. Orally or intravenously empiric ceftriaxone, azithromycin, and metronidazole in patients with more severe symptoms should not be prescribed before fecal sampling.<sup>7</sup>



**Fig. 3 – (A) Microscopic findings showed numerous infiltrating of plasma cells, lymphocytes, interstitial edema, and congestion in the lamina propria indicated viral colitis. (B) Repeat biopsy revealed only a few infiltrations of lymphocytes in the lamina propria.**

completely disappeared, and with a satisfactory aeromedical examiner report, the Medical Council released him for duties.

**Discussion**

Diarrhea is defined as a condition that the patient having at least three loose, liquid, or watery bowel movements each day. Diarrhea could be classified into acute or chronic and infectious or noninfectious according to its duration and symptoms. Acute diarrhea lasting less than 2 weeks and viral pathogens are the most common causes and are mostly self-limiting.

Although respiratory droplets and aerosols (especially during unprotected close contact) are the main routes of COVID-19 transmission, the fecal-oral routes may also be a potential route. Recent studies reported SARS-COV-2 detection in feces via either rectal swabs or feces sampling. Currently, very limited fecal RT-PCR are performed for COVID-19 only for research purposes<sup>8</sup>. Multiple GIT presentations, such as anorexia, nausea, vomiting, diarrhea, dysentery, hema-tochezia, bowel cramps, hiccup, belching, and blowing, are well documented in the literature. Dysentery is a possible GIT complication in COVID-19 patients (with or without pneumonia) that may be resistant to common treatments, persist

for a long time, and are accompanied by recurrent episodes.<sup>4</sup> Hemorrhagic colitis with diffuse inflammation and patchy erythema of the colonic mucosa in colonoscopy have been reported in concurrent GIT and COVID-19 pulmonary infection.<sup>5</sup> New onset or recurrent IBD may be one of the other GIT complications of COVID-19 infection. However, a definitive IBD diagnosis needs colonoscopy and pathological assessment.<sup>9</sup>

From an aeromedical point of view, he will not be allowed to return to flying until he has full recovery with normal tests and a satisfactory report from the aeromedical council. Indeed, his in-flight medical sudden incapacitation risk must be less than 1% for rejoining.<sup>10</sup>

---

## Conclusions

For all practical purposes, this case can be considered as COVID-19 with bloody diarrhea. Because of laboratory limitations and the exposure risk for the health care personnel, more evaluation and research should be done in the future on this topic.

---

## Ethics approval and consent to participate

The ethical approval of this study was issued with registration N# 10167138 by the Ethics Committee of the Medical Faculty in Aja University of Medical Sciences.

---

## Disclosure of competing interest

The authors have none to declare.

---

## Acknowledgments

The authors thank all the dear colleagues who helped us in writing this article.

---

## REFERENCES

1. Mahajan K, Chandra KS. Cardiovascular comorbidities and complications associated with coronavirus disease 2019. *Med J Armed Forces India*. 2020;76(3):253–260. <https://doi.org/10.1016/j.mjafi.2020.05.004>.
2. Wang D, Hu B, Hu C, et al. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. *J Am Med Assoc*. 2020;323:1061–1069.
3. Casadevall A, Pirofski LA. The convalescent sera option for containing COVID-19. *J Clin Invest*. 2020;130:1545–1548.
4. Hormati A, Shahhamzeh A, Afzian M, Khodadust F, Ahmadpour S. Can COVID-19 present unusual GI symptoms? *J Microbiol Immunol Infect*. 2020. <https://doi.org/10.1016/j.jmii.2020.03.020>.
5. Carvalho A, Alqusairi R, Adams A, et al. SARS-CoV-2 gastrointestinal infection causing hemorrhagic colitis: implications for detection and transmission of COVID-19 disease. *Am J Gastroenterol*. 2020;115(6):942–946. <https://doi.org/10.14309/ajg.0000000000000667>.
6. Amirabadi Farahani A, Shahali H. Determine the medical causes and diseases which led to early and permanent medical disqualification of military cadets. *Roman J Milit Med*. Aug 2020;CXXIII(No.3):208–212.
7. Nemeth V, Pflieghaar N. Diarrhea [Updated 2020 Jul 19]. In: *StatPearls*. Treasure Island (FL): StatPearls Publishing; 2020 Jan. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK448082/>.
8. Li XY, Dai WJ, Wu SN, Yang XZ, Wang HG. The occurrence of diarrhea in COVID-19 patients. *Clin Res Hepatol Gastroenterol*. 2020;44(3):284–285. <https://doi.org/10.1016/j.clinre.2020.03.017>.
9. Samanta J, Dhar J, Khaliq A, Kochhar R. Novel coronavirus infection: gastrointestinal manifestations. *J Dig Endosc*. 2019;11(1):13–18. <https://doi.org/10.1055/s-0040-1712077>.
10. Gradwell DP, Rainford DJ. *Enesting's Aviation and Space Medicine*. 5th ed. London: CRC Press; 2016.