



## CASUISTIC PAPER

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# Gastrointestinal symptoms as antecedent signs of severe acute respiratory syndrome coronavirus 2 infection

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## ABSTRACT

**Introduction.** The coronavirus disease 2019 (COVID-19) is an acute infectious disease of the respiratory system caused by severe acute respiratory syndrome coronavirus (SARS-CoV-2).

Most patients present with typical, respiratory symptoms. Common signs include cough, fever, dyspnea and shortness of breath. In this case we provide atypical indications of COVID-19, which may occur earlier than respiratory symptoms.

**Aim.** This case is an example of an unusual course of SARS-CoV-2 infection.

**Description of the case.** This article describes a case of a 63-year-old man and his wife, a 60-year old woman who were admitted to the emergency department with a few days' history of gastrointestinal symptoms. Both patients presented with the digestive symptoms of nausea, diarrhea and loss of appetite. They denied abdominal pain and the loss of smell or taste. Due to suspicion of SARS-CoV-2 infection a nasopharyngeal swabs of both patients was taken.

The results of real-time reverse transcriptase-polymerase chain reaction were positive. When the final diagnosis of COVID-19 was established they were transported to another hospital.

**Conclusion.** COVID-19 may manifest with atypical indications such a nausea and diarrhea. An atypical indications of COVID-19 may occur earlier than respiratory symptoms. It is important for clinicians to remain alert.

**Keywords.** COVID-19, diarrhea, gastrointestinal, SARS-CoV-2

## Introduction

The coronavirus disease 2019 (COVID-19) is an acute infectious disease of the respiratory system caused by severe acute respiratory syndrome coronavirus (SARS-CoV-2). The first cases were reported in Wuhan City, Hubei Province, China in December 2019. The

most common, typical symptoms include: cough, fever or dyspnea. However unusual manifestations of the disease are also observed.<sup>1,2</sup>

COVID-19 may be initially masked by gastrointestinal symptoms. Human intestinal epithelial cells are susceptible to SARS-CoV-2 infection. SARS-CoV-2

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tropism to the gastrointestinal tract involves angiotensin-converting enzyme (ACE)-2 receptors, which are also present in the intestines.<sup>3,4</sup>

**Aim**

This case is an example of an unusual course of SARS-CoV-2 infection.

**Description of the case**

A 63-year-old Caucasian man and his wife, a 60-year old Caucasian woman were admitted to the emergency department on July 5, 2020 with a few days' history of weakness, nausea, and diarrhea. The first symptoms in both patients about one week ago appeared. They denied contact with individuals exhibiting respiratory symptoms and any travels. The man's past medical history included arterial hypertension and benign prostatic hyperplasia. He was undergoing treatment with angiotensin-converting enzyme inhibitor (ramipryl) and alpha-1-adrenergic receptor antagonist (tamsulosin). He mainly reported nausea, a loss of appetite, weakness, and diarrhea for 3 days, and to a lesser extent, mild coughing. He denied vomiting, abdominal pain, loss of smell and taste. His body temperature was 36.4°C and blood pressure was 140/90 mmHg; his heart and respiratory rates were normal at 80 bpm and 16 breaths/min, respectively. The saturation on pulse oximetry was 92%. Auscultation revealed cracking in the lower right lung field.



**Fig. 1A.** Imaging findings of a 63-year-old man with coronavirus disease 2019. Chest X-ray showing bilateral pneumonia affecting the lungs

The woman's past medical history included arterial hypertension. She was undergoing treatment with angiotensin-converting enzyme inhibitor (ramipryl) and beta-adrenergic receptor antagonist (metoprolol). She mainly reported nausea, a loss of appetite, diarrhea for 4 days and weakness. She denied abdominal pain, loss of smell and taste. A few days ago she had one-off an episode of vomiting. Her skin was sweaty, body tem-

perature was 36.8°C, and blood pressure was 150/90 mmHg; her heart and respiratory rates were normal at 90 bpm and 20 breaths/min, respectively. Her saturation on pulse oximetry was 93%. The lungs appeared normal on auscultation. Both patients underwent chest radiography of the lungs, revealing bilateral inflammatory changes in the man (Fig. 1A) and basal, bilateral inflammatory changes in the woman (Fig. 1B).



**Fig. 1B.** Imaging findings of a 60-year-old woman with coronavirus disease 2019. Chest X-ray showing basal, bilateral inflammatory changes in the lungs

The man's laboratory values on admission were as follows: leukocytosis with a predominance of neutrophils (neutrophil count, 10820 cells/ $\mu$ L; normal, 1900–7500), elevated C-reactive protein (46.9 mg/L; normal, <10), elevated D-dimer (1126 ng/mL; normal, <500), normal electrolyte levels, increased aspartate transaminase (47 U/L; normal, <34), and low procalcitonin (0.06 ng/mL; normal, <0.5).

The woman's laboratory test showed a normal white blood cell count, elevated C-reactive protein (52.1 mg/L; normal, <10), normal electrolyte levels, increased aspartate transaminase (110 U/L; normal, <34), low procalcitonin (0.04 ng/mL; normal, <0.5), increased gamma-glutamyltransferase (367 U/L; normal, <38), and increased alkaline phosphatase (233 U/L; normal, 46–116). With COVID-19 suspicion, nasopharyngeal swabs were obtained from the patients. While awaiting the results, the man one dose of an intravenous infusion of ceftriaxone (2 g) and fluids received. The women anti-emetics and fluids received.

Realtime reverse-transcriptase polymerase chain reactions of the nasopharyngeal swabs of both patients revealed positivity for the SARSCoV2 nucleic acid. Due to desaturation, both patients underwent oxygen therapy with a face mask (3 L/min O<sub>2</sub>) and were admitted to a hospital specializing in infectious diseases, which was further than 20 km from our emergency department.

Unfortunately, we do not know the outcome of the disease in both patients.

## Discussion

Gastrointestinal symptoms are reported in the literature as less common indications of COVID-19, which may occur earlier than respiratory symptoms and fever.<sup>4-8</sup>

The analysis of the available data presented by D'Amico et al. revealed an overall diarrhea rate of about 10% in COVID-19 patients.<sup>3</sup> The incidence of diarrhea in COVID-19 is certainly underestimated. SARS-CoV-2 uses the angiotensin-converting enzyme 2 (ACE2) which is expressed not only in lung but also in the esophagus, liver, small intestinal and colon epithelia.<sup>4</sup>

In a study from hospitals in China presented by Guan et al, it reported nausea or vomiting in 55 (5%) and diarrhea in 42 (3,8%) patients.<sup>5</sup>

Nausea and diarrhea may be the only manifestations in the early stage.<sup>6-8</sup>

Furthermore, some studies have demonstrated the presence of viral RNA in stool or rectal swabs of COVID-19 patients.<sup>9,10</sup> This suggested that fecal source can also lead to viral transmission.

## Conclusion

Digestive symptoms are becoming increasingly more common in patients with COVID-19 and may be an antecedents signs of SARS-CoV-2 infection. In this case study, we find that COVID-19 may manifest with gastrointestinal indications such a nausea and diarrhea. An atypical indications of COVID-19 may occur earlier than respiratory symptoms. It is important for clinicians to remain alert.

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