

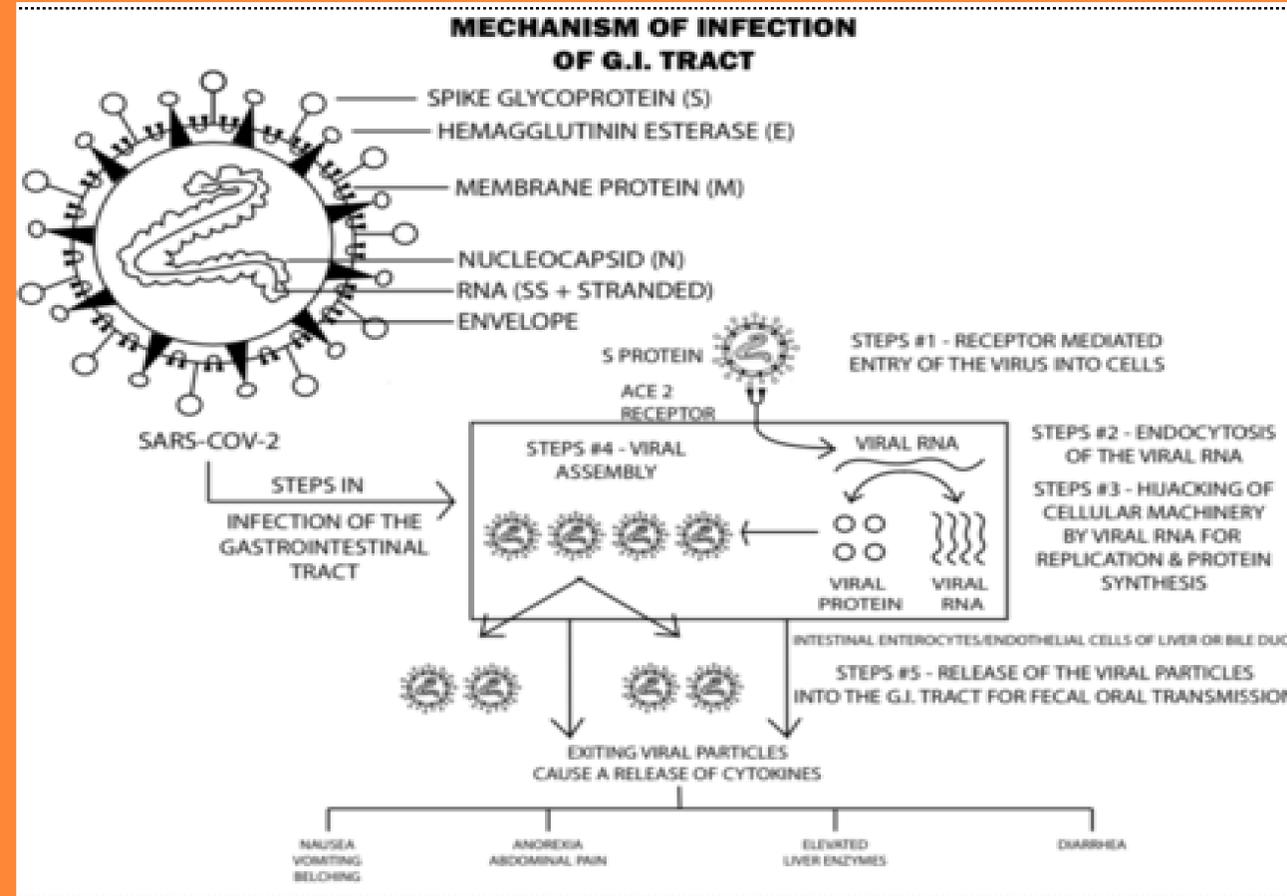
INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is a novel coronavirus that has not been previously identified. On February 11, 2020 the WHO officially named the virus and on March 11, 2020 they characterized the virus as a pandemic. World wide the virus has affected roughly 100 million people and close to 25 million in the United States alone, as of January 2021. Individuals infected with COVID-19 may have several varied and complex presentations that are not completely understood. In addition to coagulopathies, respiratory phenomena and flu-like symptoms, gastrointestinal tract manifestations are now recognized as a potential route of unintended transmission.

CASE DESCRIPTION

Patient is a 75-year-old Hispanic male with a past history of COVID-19 pneumonia initially diagnosed April 3, 2020. Shortly after he was diagnosed with COVID, he developed acute hypoxemic respiratory failure and was therefore intubated and placed on mechanical ventilation. After passing spontaneous breathing trials, he was extubated 2 weeks later. He underwent a prolonged and complicated hospital course secondary to myopathy, coagulopathy, and nutritional status. Prior to transfer to inpatient rehabilitation, he was ruled out for continued COVID-19 infection with two negative tests over 24 hours apart. At the inpatient rehabilitation facility his dysphagia worsened and the decision to move forward with percutaneous endoscopic gastrostomy tube placement was made. Of note, one day prior to the procedure, he had a negative COVID test. His PEG tube placement was complicated by iatrogenic bowel perforation requiring transfer back to acute care. Prior to transfer to acute care, he had another COVID test which resulted positive. He remained intubated post-operatively for the following several days as he developed a fever and respiratory symptoms.

GASTROINTESTINAL IMPLICATIONS OF COVID-19



COVID-19 GI TRACT VS RESPIRATORY

SARS-CoV-2 may attack the GI tract because of widely expressed angiotensin-converting enzyme 2 (ACE 2) receptors in the intestine, which is a receptor for the SARS-CoV-2 virus. Tissue specimens from patients with COVID-19 demonstrate that the regions of the GI tract most involved are the cytoplasm of the gastric and intestinal epithelial cells, as well as the gastric, duodenal and rectal glandular epithelial cells.

Similar to how COVID-19 is tested and confirmed in the respiratory tract, stool samples of patients suspected of having COVID-19 are able to undergo nucleic acid amplification testing. Compared to patients with respiratory predominant symptoms, patients who present with GI complications as their main presenting symptom are more likely to experience a longer viral delay before clearing the virus and have a delayed diagnosis. Understanding the pathogenesis of COVID-19 in the GI tract and how long the virus can survive within the GI tract is evolving and is a point of future research.

RESULTS AND DISCUSSION

There are rare documented cases of reinfection with COVID-19. Patients infected with COVID-19 develop antibodies to the virus that are presumably protective. However, this has yet to be definitely established. In patients with weakened immunities, they may not mount a protective immune response and if they do it is unknown how long it will last.

Since the submission of this original abstract, there have been numerous case reports detailing the gastrointestinal symptoms associated with COVID-19 and the impact on the gut microbiome. In a retrospective study of patients with ARDS due to COVID-19, these patients had higher rates of ileus, bowel ischemia, and elevated liver enzymes compared to patients with ARDS not due to COVID-19. In fact, viral particles can even be detected in the stool of COVID-19 patients and if shed without proper hygiene can contribute to transmission through a fecal/oral route in addition to the previously detailed respiratory transmission pathway. Considering that stools can be positive for SARS-CoV-2 nucleic acids even when respiratory symptoms are negative, the preventative management of fecal-oral transmission deserves close attention. In light of this, patients who present with no respiratory symptoms and only GI symptoms are still favored for testing. In the case of our patient, we propose the possibility that COVID-19 viral particles are housed in the bowel at some point during the disease process and if the bowel perforates it may be possible for COVID-19 to cause a reinfection based on the clinical sequelae observed in our patient.

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