Text

Management of upper GI bleeding in patients with COVID-19 pneumonia

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Cornoavirus disease 2019 (COVID-19) has become a worldwide pandemic. The typical presentation is a respiratory illness with fever, cough, and shortness of breath. Gastrointestinal symptoms are being increasingly recognized and include abdominal pain, vomiting, diarrhea, and nausea.[1] We present a case series of 6 patients who presented to our hospital with COVID-19–associated pneumonia (fever, shortness of breath requiring oxygen, positive COVID-19 polymerase chain reaction [PCR] test, and infiltrates showing on chest radiograph), and upper GI bleeding. The patient and clinical characteristics can be found in Table 1. The GI manifestations were hematemesis or melena.

Guidelines advise that patients who present with acute upper gastrointestinal bleeding undergo endoscopy within 24 hours of presentation[2]. Endoscopy can not only provide therapy but can also allow for risk stratification for re-bleeding that can dictate management. However, the discussion for endoscopy in patients with COVID-19 pneumonia brings about unique management decisions. Although endoscopy can provide therapy if a discrete visible vessel is seen, the risk of the procedure may outweigh the benefit in patients with COVID-19 pneumonia.

First, five of the six patients in this series were on supplemental oxygen while one had an endotracheal tube. Performing upper endoscopy would have likely required general anesthesia with an endotracheal tube in the 5 patients given the patient's oxygen requirements and/or procedure indication (hematemesis). Extubation after the procedure becomes challenging in the setting of pneumonia. In addition, a recent study from China demonstrated an increased mortality rate once a patient with COVID-19 pneumonia is intubated[3]. Although the data for this was in emergent intubation for respiratory failure (and not a elective procedure), the data is compelling. Second, there is a real concern for transmission of the virus to the anesthesiologist, staff, and endoscopist; given aerosolization of respiratory droplets during endoscopy[4].

Given the risks of endoscopy may outweigh the benefits we decided to manage these patients conservatively with a proton pump inhibitor drip, blood transfusion as needed, and frequent monitoring of vital signs/GI symptoms /hemoglobin value. Endoscopy was reserved if the patient did not respond to conservative management by 24 hours (lack of hemodynamic stability and if the hemoglobin was not stable). Delaying the endoscopy for 24 hours has recently been shown to not affect 30-day mortality compared to earlier endoscopy[5]. All 6 of our patients responded to conservative management. Cessation of clinical symptoms of acute upper gastrointestinal bleeding was seen in all of our patients in combination with stabilization of hemoglobin. None of the patients required upper endoscopy during their clinical course.

The exact cause of GI bleeding in this cohort is unknown, as endoscopy was not performed. The most likely cause is ulcer related. Another etiology being recognized is COVID related coagulopathy[6]. Given the patients responded to conservative management, the former is more likely.

In conclusion, the management of patients admitted with COVID-19 pneumonia who develop upper GI bleeding is challenging. It can possibly be managed conservatively without endoscopy because all of our patients responded by 24 hours. Lack of response in 24 hours may indicate a need for endoscopy with personal protective equipment.

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TABLE 1: Case series of 6 patients with COVID-19 pneumonia and upper GI bleeding

Patient	**Age**	**Gender**	**Presentation GI symptom** **O_2 Saturation**	**Hb g/dL, HCT %, Plts K/uL**	**Transfusion**	**CXR finding**	**GBS score**	**D-Dimer ng/mL**	**Ferritin ng/mL**	**LDH U/L**	**GI outcome**
1	77	Male	Hematemesis 94% RA	9.6/30.5/154	No	BI	12	372	860	399	GI bleed resolved
2	65	Male	Melena 86% RA	6.2/17.7/151	Yes 2 U PRBC	BO	18	3042	7987	1142	GI bleed resolved
3	46	Male	Melena 90%RA	6.8/21.2/226	Yes 2U PRBC	BI	11	285	3970	878	GI bleed resolved
4	70	Female	Melena 92% RA	10.2/31.2/260	No	BO	11	38674	1040	1188	GI bleed resolved
5	67	Female	Hematemesis 88%RA	6.1/20.7/209	Yes 2U PRBC	BI RUL opacity	15	-	802	563	GI bleed resolved
6	82	Female	Melena 94% 5LO2	8.6/29.2/302	Yes 2U PRBC	BI LLL opacity	14	1198	705	959	GI bleed resolved

RA-Room Air, O2-Oxygen, CXR= Chest ray, GBS= Glasgow-Blatchford Score, BI=Bilateral interstitial infiltrates, BO= bilateral opacities, RUL= right upper lobe, LLL= left lower lobe, Hb=Hemoglobin , HCT= Hematocrit, LDH Upper Limit of Normal 242 U/L, Ferritin Upper Limit of Normal 400 ng/mL, D-Dimer Upper Limit of Normal <229 ng/mL.

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