

Case Report

Acute mesenteric ischemia: an uncommon presentation of COVID-19

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ABSTRACT

COVID-19 caused by severe acute respiratory syndrome coronavirus 2 is a highly infectious disease and is causing enormous morbidity and mortality all over the world. Initially it was thought to cause only respiratory complications. But subsequent reports started appearing implicating the gastrointestinal system, nervous system. Thromboembolic complications like myocardial infarction, pulmonary embolism, stroke and mesenteric ischemia were reported to be the main causative factors. Hereby we are reporting one such case of a patient who presented to surgery emergency with predominant abdominal symptoms.

Keywords: COVID-19, Mesenteric ischemia, Acute abdomen

INTRODUCTION

Originated from Wuhan, China COVID-19 has spread all over the world. 1,796,292 people have died so far from the coronavirus COVID-19 outbreak as of December 30, 2020.¹ It mainly causes respiratory problem but apart from this numerous other manifestations are also present and thromboembolic phenomenon is one of them.² Pulmonary embolism and acute mesenteric ischemia were also reported in few patients with COVID infection.³ It causes systemic inflammatory state which leads to hyper coagulation and small vessels thrombosis in the sub mucosal vessels resulting in ischemia.³ Endothelium of the vessels also express ACE-2 receptors for SARS COV-2 which leads to its dysfunction and thrombosis.⁴ We are reporting one such uncommon case of COVID-19 presenting with mesenteric ischemia.

CASE REPORT

A 57-year gentleman presented to surgical emergency with complaint of pain abdomen, vomiting, non-passage of stool and flatus and difficulty in breathing of 3 days duration. Pain was in central abdomen, insidious onset,

gradually progressive, moderate intensity and associated with increasing abdominal distension. Patient also complained of multiple episodes of bilious vomiting. No history of melena, hematemesis or jaundice. Patient was nonsmoker, nonalcoholic and has no significant past or family history. At presentation patient was conscious and oriented with blood pressure of 116/74 mmHg, pulse was 108 per minute, respiratory rate was 26 and saturation was 94%. Abdomen was distended and Cullen's sign was present. Generalized tenderness was present and on auscultation bowel sounds were absent. Rest of the systemic examination was normal.

X-ray abdomen was done which showed nonspecific bowel pattern. Ultrasonography showed moderate ascites with internal echoes. NCCT abdomen was done which revealed dilatation of duodenum, jejunum and proximal ileum with congestion of small bowel mesentery and possibility of small bowel ischemia (Figure 1). Contrast enhanced CT was not done due to deranged renal function test at the time of presentation. RT-PCR for COVID 19 was positive.

The patient was taken up for surgery and on exploratory laparotomy one liter of serosanguinous fluid was present. Part of omentum was gangrenous, mesentery was thickened and inflamed, Bowel loops were gangrenous from 60 cm distal to duodeno-jejunal flexure till 40 cm proximal to IC junction (Figure 2). Resection of gangrenous bowel, proximal jejunostomy and distal mucous ileostomy was done. As the bowel was edematous so primary anastomosis wasn't attempted.

Table 1: Laboratory parameters of the patient.

Variables	Findings	Parameters	Findings
Hemoglobin	8.1 g/dl	COVID-19 PCR	Positive
Total leukocyte	18600/ μl^3	LDH	364(<247 μl)
Neutrophil	79%	D-dimer	>1050 (<240)
Procalcitonin	2.54 (<0.5 ng/ml)	ECG	Sinus tachycardia
CRP	158 (<1 mg/l)	X-ray chest	b/l CP angle blunting
Prothrombin time	17.0 second	Blood culture	Sterile
INR	1.5	Serum amylase	82 U/l
Serum creatinine	2.4 mg/dl	Blood urea	99 mg/dl
Serum bilirubin Total	0.9 mg/dl	Alkaline phosphatase	75 IU/l
SGOT	52 IU/l	SGPT	61 IU/l



Figure 2: Gangrenous small bowel.

In post-op period patient was shifted to COVID ICU where he was treated with IV antibiotics, IV injection enoxaparin. Oxygen saturation and vitals were monitored. Serial drain output, blood test, CRP and d-dimer studies were done.

Extended autoimmune profile was sent which was negative. Patient responded to treatment well and was allowed orally. Histopathology report of resected specimen showed gangrenous bowel with transmural necrosis and hemorrhage and submucosal vessel thrombosis. After 14 days repeat RT-PCR was done which came out to be negative and patient was shifted to general ward.

DISCUSSION

Thromboembolism is one of the dangerous complications of COVID-19. The risk factor for which are hypertension, diabetes, obesity, chronic bronchitis and essential thrombocytosis and cardiac transplantation. The main presentation are nausea, vomiting, pain abdomen, fever, loose stools, breathing difficulty, sore throat and cerebrovascular manifestations.⁵ Apart from the respiratory investigations for COVID-19 we have to extend our investigation in line of other manifestation of COVID because approximately 57% of COVID-19 infected patients exhibit deranged abdominopelvic CT findings, with 18% due to a hyper coagulation.⁶ Therefore it is very important to give low molecular weight heparin in all hospitalized patient with COVID-19.⁷ One must have high index of suspicion if patient present with abdominal symptoms and timely investigation both blood and radiological will clinch the diagnosis and help further in management.

CONCLUSION

It is very important to understand the thromboembolic manifestation of COVID-19. Mesenteric ischemia is a dangerous manifestation with high morbidity and mortality. Present case is one such example where with timely investigation, work up, and diagnosis and

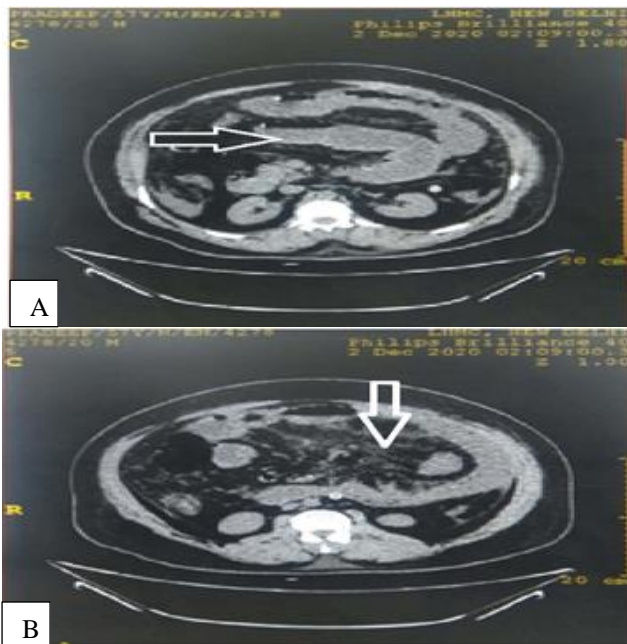


Figure 1: CT scan of abdomen with small bowel dilatation and mesenteric ischemia.

improved the management of the patient. Further research work is needed to understand more about the etiopathogenesis of mesenteric ischemia.

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