VOLUME - 10, ISSUE - 04, APRIL- 2021 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

General Surgery

ATYPICAL PRESENTATION OF COVID19 A CASE REPORT OF ACUTE MESENTERIC ISCHEMIA – SMA THROMBOSIS IN A COVID PATIENT

Prof. Dr. B. Santhi	M.S DGO H.O.D Department Of General Surgery Govt. Kilpauk Medical College & Hospital Chennai- 600010.
Dr.A.K.Kalpanadevi	M.S DGO Asst Professor Department of General surgery Govt. Kilpauk medical college & Hospital Chennai- 600010.
Dr. S. Divyadurga*	Resident, Department of general surgery govt. Kilpauk medical college & hospital chennai- 600010. *Corresponding Author

ABSTRACT Novel coronavirus disease 2019 (COVID-19) was first identified in Wuhan, China, and declared by World Health Organization as a pandemic in March 2020 due to its exponential spread across the globe. The causative agent being SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) that causes pneumonitis and associated respiratory complications. However, several extrapulmonary presentations, including gastrointestinal (GI) symptoms have been recently reported in COVID-19 patients. Due to the prominence of the pulmonary presentations, extrapulmonary manifestations can be easily missed and overlooked, resulting in a delayed diagnosis of COVID-19 in patients with primary GI manifestations.We report this case of acute mesenteric ischemia in a covid19 suspect and share our experience on its management.

KEYWORDS : Covid-19, Sars-cov-2, Acute Mesenteric Ischemia, (AMI), Sma Thrombosis

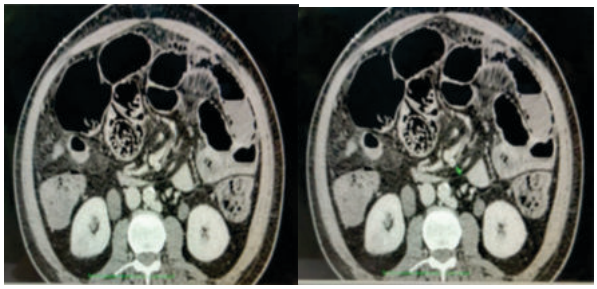
INTRODUCTION:

Acute mesenteric ischemia is a rare abdominal emergency that is associated with high rates of morbidity and mortality. Thromboembolic complications are being increasingly noticed in coronavirus-19 pneumonia. Apart from deep venous thrombosis and pulmonary embolism, acute mesenteric ischemia has been reported in COVID-19 patients[4].Prompt diagnosis requires a high index of suspicion and early contrast computed tomography imaging. Treatment of this life-threatening condition includes surgical resection of the necrotic bowel, restoration of blood flow to the ischemic intestine and supportive measures - gastrointestinal decompression, fluid resuscitation, hemodynamic support.

CASE REPORT:

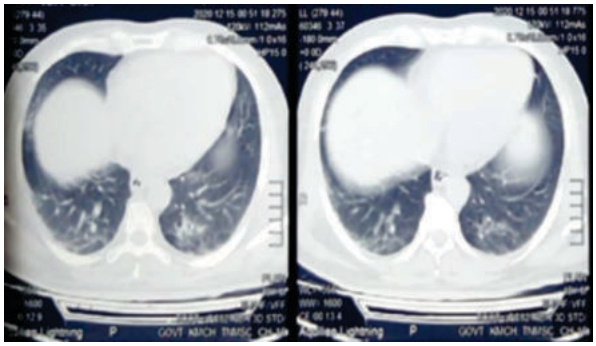
A 48 years old male patient , who is a known diabetic with cardiovascular disease under regular medications for 15 years , presented to the casualty with complaints of abdominal pain, distension and diarrhea for 4 days. Patient was conscious , tachypneic , afebrile , hydration fair, tachycardia present and room air oxygen saturation was 96% when received. His abdomen was distended with diffuse tenderness and absent bowel sounds. His abdominal pain was disproportionate to physical findings. Lab values were within normal limits.After stabilizing the patient he was consequently shifted for radiological imaging studies. Contrast enhanced computed tomography showed dilated ileal loops (>3.3cm) with pneumatosis , suggestive of Acute mesenteric ischemia with SMA thrombosis (non enchancing filing defect of 3.7cm noted about 6cm from its origin).

Figure 1. CECT ABDOMEN of the patient showing SMA thrombus with pneumatosis intestinalis.



His covid RT-PCR test turned out to be negative but CT chest of the patient revealed ground glass opacities suggestive of covid19 and his covid19 antibody titres were elevated. Physician and Cardiologist fitness obtained and patient was taken up for emergency laparotomy.

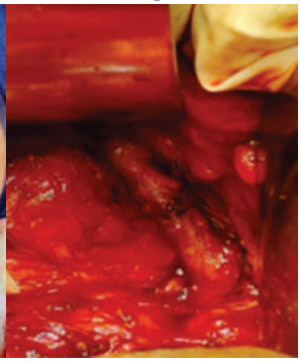
Figure 2. CT chest of the patient showing ground glass opacities.



Intra operative findings of gangrenous small bowel extending about 100cm from duodenojejunal flexure to about 40cm from ileocecal junction noted with rest of the bowel and solid organs being normal.

Figure 3. Gangrenous Small Bowel

Figure 4. Post Sma Arteriotomy Closure



SMA arteriotomy with thrombectomy done with vascular surgeon's assistance and then resection of the gangrenous bowel done with proximal jejunostomy and distal ileostomy.Patient was started on anticoagulants in the immediate post operative period. Patient was then discharged

and was on regular follow up. Patient was subsequently taken up for ostomy reversal after 2 months.

Figure 5. Resected bowel with extracted thrombus

Figure 6. Proximal jejunum with distal ileum

Figure 7. Ostomy reversal

Figure 8. Post OSTOMY reversal wound

DISCUSSION:

Acute mesenteric ischemia is a devastating complication with high mortality rate, so high suspicion, early recognition and timely treatment is essential to avoid morbidity and mortality associated with this disorder. Presumptively, four mechanisms, in isolation or in varying combinations could account for this fulminant complication in severe COVID-19[1-3]. First, a coagulation disorder (hypercoagulability) induced by systemic inflammatory state, endothelial activation, hypoxia and immobilization may lead to mesenteric vascular thrombosis. Preliminary pathological evidence has shown bowel necrosis with small vessel thrombosis involving the submucosal arterioles, thereby pointing to an in-situ thrombosis of small mesenteric vessels rather than an embolic event . Second, elevated levels of von Willebrand Factor have been reported in COVID-19. von Willebrand Factor is released from Weibel-Palade bodies in response to endothelial damage.Vascular endothelium expresses angiotensin converting enzyme 2, the target receptor for severe acute respiratory syndrome 2 (SARS-CoV-2), which possibly explains the endothelial cell tropism of SARS-CoV-2 and subsequent endothelial dysfunction or damage with resultant vascular thrombosis. Third, expression of angiotensin converting enzyme 2 on enterocytes of small bowel, the target receptor for SAR-Cov-2, may result in intestinal tropism and direct bowel damage. The presence of angiotensin converting-enzyme 2 protein, has been demonstrated by immunofluorescence in the gastrointestinal epithelium[6]. Lastly, shock or hemodynamic compromise which is commonly associated with severe COVID-19 pneumonia may lead to a non occlusive mesenteric ischemia. The imaging characteristics of the patients presenting with GI dominant manifestations include distended fluid-filled bowel loops with post-contrast enhancement and surrounding fat stranding/mesenteric inflammation[7].However, more severe cases of bowel wall necrosis leading to surgical resection have also been reported[8].Reports of the GI complications following COVID-19 are evolving[9].The most clinically significant imaging findings reported are pneumatosis intestinalis and portal venous gas, the two alarming signs of bowel ischemia. Although fluid-filled dilated loops have been frequently reported, this finding is associated with diarrhea, a common but nonspecific manifestation of the COVID-19 and other viral infections[10].

A vigilant and systematic approach is needed to suspect, diagnose and manage this otherwise fatal complication of COVID-19 which is a relatively new disease with emerging new evidences. Despite pulmonary symptoms being the lead, gastrointestinal symptoms are emerging and can indicate a serious complication such as intestinal ischemia. Hence, early imaging should be considered in order to further strengthen the early detection and early intervention to reduce the mortality rate as much as possible.

REFERENCES:

1. Parry AH, Wani AH, Yaseen M. Acute Mesenteric Ischemia inSevere Coronavirus-19 (COVID-19): Possible Mechanisms andDiagnostic Pathway. Acad Radiol. 2020;27(8):1190.
2. Varga Z, Flammer AJ, Steiger P, Haberecker M, Andermatt R, Zinkernagel AS, et al. Endothelial cell infection and endotheliti in COVID-19. Lancet. 2020;395(10234):1417–8.
3. Panigada M, Bottino N, Tagliabue P, Grasselli G, NovembrinoC, Chantarangkul V, et al. Hypercoagulability of COVID-19patients in intensive care unit: A report of thromboelastography findings and other parameters of hemostasis. J Thromb Haemost. 2020;18(7):1738–42
4. Bhayana R, Som A, Li MD, et al. Abdominal imaging findings in COVID-19: preliminary observations. Radiology 2020. 2020 May 11:201908.
5. Escher R, Breakey N, Lämmle B. Severe COVID-19 infection associated with endothelial activation. Thromb Res 2020 Jun 1;190:62.
6. Xiao F, et al. Gastroenterology 2020;158:1831–1833.e3.
7. Behzad S, Aghaghazvini L, Radmard AR, Gholamrezanezhad A. Extrapulmonary manifestations of COVID-19: radiologic and clinical overview. Clin Imaging 2020;66:35–41. https://doi.org/10.1016/j.clinimag.2020.05.013.
8. Bianco F, Ranieri A, Paterniti G, Pata F, Gallo G. Acute intestinal ischemia in a patient with COVID-19. Tech Coloproctol 2020;1. https://doi.org/10.1007/s10151-020-02255-0.
9. de Barry O, Mekki A, Diffre C, Seror M, Hajjam ME, Carlier R-Y. Arterial and venous abdominal thrombosis in a 79-year-old woman with COVID-19 pneumonia. Radiol Case Rep 2020;15(7):1054–7. https://doi.org/10.1016/j.radcr.2020.04.055.
10. Bhayana R, Som A, Li MD, et al. Abdominal imaging findings in COVID-19:preliminary observations. Radiology 2020;201908. https://doi.org/10.1148/radiol.2020201908.