

Early detection and Successful Management of Acute Mesenteric Ischaemia in symptomatic COVID 19 patient

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Case Report

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Abstract

Newer evidence states that COVID 19 pneumonia induces a hypercoagulable state leading to vascular and microvascular thrombotic events. Acute mesenteric ischemia (AMI) is a potentially fatal vascular emergency with overall mortality of 60% to 80%. [1] However till date, only few cases of SMA thrombosis in COVID-19 positive patients are reported and most have succumbed to COVID-19 or mesenteric ischaemia. [2-4] Physicians treating COVID 19 usually treat respiratory symptoms and may completely overlook any other uncommon pathology.

This case report emphasises that a patient with early detection and management of acute mesenteric ischaemia being symptomatic for COVID 19 can avoid major bowel surgery and negate any morbidity or mortality associated with the same.

Introduction

COVID 19 has been a tyrant for the year 2020 and continues to be so, even though vaccines have started been administered worldwide. Acute Mesenteric Artery Ischaemia (AMI) tends to be destructive on its own with large multifocal bowel necrosis and gangrene, usually leading to death. COVID 19 and AMI seem to be a deadlier combination knowing the destructive nature of both alone. However early detection and treatment of both can be quite comfortable for both doctor and patient as we have shown in this case report.

We report the first symptomatic COVID 19 patient presenting with bowel ischaemia and mesenteric arterial thrombosis treated early with catheter directed thrombolysis and thrombus aspiration without bowel gangrene or need for laparotomy.

Case Report

A 37 year old COVID 19 positive male, presented in the late hours with severe abdominal pain not resolving with medication and associated intermittent episodes of vomiting. He had irregular spikes of 102F fever since 72 hours but was hemodynamically stable. Clinical Examination showed a soft abdomen with mild guarding over epigastric and paraumbilical region. Lactate and Procalcitonin were borderline elevated. He was started on symptomatic treatment and blood investigations were called for. However pain did not subside and continued to aggravate even with high doses of NSAIDs and opioid analgesics.

Contrast Enhanced CT with angiography of abdomen showed thrombus at the origin of Superior Mesenteric Artery extending into the jejunal arcades with impending gangrene of bowel (Fig. 1a). He was urgently taken up for catheter directed thrombolysis overnight (Fig. 1b). Inj. Actilyse (recombinant human tPA), 8 mg given bolus followed by 1mg/hour was given via 4F 10cm Cragg Mcnamara Thrombolysis Infusion Catheter into the thrombosed SMA. Reshoot angiogram with thrombus aspiration done on Post Operative Day 1 showed complete resolution of thrombosis with opening up of jejunal arcades and the

main SMA trunk (Fig. 1c and 1d). All the hardware was removed and puncture sites secured. Patient was transferred post operatively to COVID isolation ward and observed as per hospital protocol. He passed stools the very next day with no abdominal symptoms. He was started orally from Post Operative Day 3 and was completely discharged from hospital after 5 days stay in the COVID 19 ward. Prothrombotic workup done was unremarkable.

Materials Used

7F sheath, 0.035 Terumo guide wire, SHK 5F catheter, 0.014" command wire, Inj. Actilyse, 7F Clot aspiration catheter

Discussion

In the course of COVID-19 disease, hypoxia, inflammatory mediators, thrombocytopenia, immobilization, sepsis, liver injury secondary to ACE2 receptor expression may predispose to arterial and venous thrombosis. [5,6] Microthrombi and inflammatory mediators are postulated to cause mesenteric ischemia as COVID 19 is said to cause endothelial damage. Patients with severe COVID-19 complicated by AMI may present with abdominal pain, nausea/vomiting, diarrhoea, abdominal distention or worsening systemic status (sepsis).

Many case reports worldwide have shown high morbidity and mortality when COVID 19 and mesenteric arterial thrombosis occur together usually leading to large bowel resections and death. Usually COVID 19 treating physicians have more focus towards occurrence of lower respiratory tract symptoms and may neglect bowel symptoms which tend to be more urgent to manage. Once organ failure sets in, the scenario ends up more frequently as a vicious cycle.

Our patient primarily came with severe abdominal pain not responding to medications and high fever which made us more suspicious for COVID 19. Early CT Angiogram of the abdomen gave us the diagnosis of Acute Superior Mesenteric Artery Thrombosis with jejunal thrash and impending gangrene of bowel. Early diagnosis and efficient thrombolysis resulted in better bowel salvage with complete resolution of symptoms on Post operative Day 1 with patient starting oral intake from Post operative Day 3.

Early management of arterial thrombosis compromising blood flow even with COVID 19 can help in reducing morbidity of COVID 19 and thus reduce overall mortality rates even while we remain trapped in the web of this PANDEMIC!!!

Declarations

Acknowledgments

We would like to thank all the medical professionals fighting against COVID-2019.

Ethics approval and consent to participate

This case report was approved by the Ethics Committee of Holy Spirit Hospital, Mumbai - 93. Oral informed consent was obtained from the patient to publish the rare case with clinical data and images.

Consent for publication

All the co-authors consent to publish this manuscript.

Competing interests

The authors have no conflicts of interest to declare.

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Figures



A



B



C



D

Figure 1

a : CT Angiogram showing Superior Mesenteric Artery Thrombosis with Jejunum Thrash b : DSA image of Superior Mesenteric Artery Thrombus c : Post thrombolysis Jejunum and Iliac Arcades d : Post thrombolysis Superior Mesenteric Artery Main Trunk