ACUTE MESENTERIC ISCHEMIA: A RARE BUT FATAL COMPLICATION IN COVID-19

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INTRODUCTION: Coronavirus disease 2019 (COVID-19) has initiated a global health-care crisis. It is known to cause multi-organ failure with respiratory failure at the helm of its clinical presentation. There is limited data known about patient’s experiencing acute mesenteric thrombosis. We present a case of patient admitted with COVID-19 pneumonia who experienced pneumoperitoneum secondary to acute mesenteric ischemia.

CASE PRESENTATION: 64-year-old male with past medical history of hypertension, chronic obstructive pulmonary disease, and former smoker presented with dyspnea, decreased appetite, nausea, and diarrhea for 10 days. On Admission he was hypoxic on room air. Lab work revealed polycythemia, lactic acidosis 3.3, D-dimer 0.87, ABG (respiratory alkalosis with underlying metabolic acidosis), elevated inflammatory markers, and positive COVID-19 PCR. Chest X ray showed diffuse pulmonary opacities. CT angiography of the chest ruled out pulmonary embolism but showed diffuse ground-glass opacities (GGOs). He was placed on High flow nasal cannula (HFNC) at 50% FiO2, and Dexamethasone 6 mg. On hospital day 8 he was tachycardic, more dyspneic and hypoxemic requiring escalation of HFNC. EKG revealed sinus tachycardia. He was empirically started on heparin drip for concern of pulmonary embolism and broad-spectrum antibiotics for suspected bacterial pneumonia. CT chest without contrast showed worsening GGOs and pneumoperitoneum not seen on prior images. He was taken to operating room for emergent exploratory laparotomy. Intraoperative findings revealed a thrombus at the branch of the mesenteric artery leading to perforated cecum with feculent peritonitis. Patient passed away several days post-op due to worsening clinical status.

DISCUSSION: Pneumoperitoneum is usually caused by perforation of abdominal viscus. COVID19 tends to cause multi organ failure(6). Elevation of pro-inflammatory cytokines can damage the microvascular system leading to uncontrolled activation of coagulation cascades which can cause small-vessel vasculitis and extensive microthrombi. There are very few cases reported regarding perforation of abdominal viscus due to microvascular thrombosis from COVID19. It is perplexing if COVID19 infection can acutely trigger this mesenteric arterial thrombus leading to ischemia and eventually perforation. It has been proposed that it might be secondary to direct viral invasion of the enterocyte cells via ACE2 receptors or immune response leading to cytokine storms (7) and activation of pro-coagulant cascades or combination of both (1,2,3). Mesenteric Ischemia is a life threatening condition requiring resection of ischemic bowel, GI decompression, and fluid resuscitation (4). Sometimes, it can be managed conservatively (5).

CONCLUSIONS: It is important to recognize that COVID19 can potentially increase the risk of bowel perforation and cause pneumoperitoneum at risk groups of patients.


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