ISSN 2689-8268 | Volume 7

American Journal of Surgery and Clinical Case Reports

Case Report Open Access

Aeromesenteria in a Fully Immunized Patient with COVID-19: A Case Report and Literature Review

Racine M* and Sauvain MO

Department of Surgery, Réseau Hospitalier Neuchâtelois, Pourtalès, Neuchâtel, Switzerland

***Corresponding author:**

Michaël Racine,
Department of Surgery, Réseau Hospitalier Neuchâtelois, Pourtalès,
Rue Gabrielle-Perret-Gentil 4, 1205 Genève,
Switzerland

Received: 06 Apr 2024
Accepted: 08 May 2024
Published: 16 May 2024
J Short Name: AJSCCR

Citation:

Racine M. Aeromesenteria in a Fully Immunized Patient with COVID-19: A Case Report and Literature Review. Ame J Surg Clin Case Rep. 2024; 7(14): 1-2

Keywords:

Piperacillin/Tazobactam; Aeromesenteria

1. Abstract

A 70-year-old man with respiratory distress due to Covid-19, developed a massive aeromesenteria. A conservative treatment with Piperacillin/Tazobactam was initiated and resulted in a positive outcome. To our knowledge, this is the first report of severe aeromesenteria in a COVID infected patient immunized against SARS-CoV-2.

2. Introduction

The COVID-19 pandemic continues to challenge clinicians with unexpected complications. This case reports the occurrence of aeromesenteria in a COVID-19 positive patient. Aeromesenteria is characterized by the presence of air within the mesenteric vessels, and is typically associated with bowel ischemia or necrosis, but can rarely be a benign condition.

3. Case Presentation

A 70-year-old man, immunized against SARS-CoV-2, presented with cough, dyspnea, and fever. Following confirmation of SARS-CoV-2 infection, the patient was admitted to the intensive care unit (ICU) for high-flow oxygen therapy. Rapid respiratory deterioration necessitated an oro-tracheal intubation. Several days later, the patient developed severe abdominal pains. He remained hemodynamically stable with no need for aminergic supports. CT scan was performed and revealed air in the inferior mesenteric vein and colonic pneumatosis, raising suspicion of an ischemic colitis (Figure 1). Because of the absence of peritonitis signs in a critically ill patient and the poor prognosis of a surgical intervention in such a situation, a supportive therapy with Piperacillin/Tazobactam was initiated. The patient's clinical condition gradually improved, with a reduction in abdominal pain until complete resolution after 4 days. The abdomen remained free of signs of peritonitis. Transit returned spontaneously after 4 days. A follow-up CT scan performed five days after the onset of symptoms demonstrated a complete regression of the aeromesenteria (Figure 2). Within the following days, the patient was extubated, and could leave the intensive care. After a rehabilitation, he was discharged without residual digestive and respiratory symptoms.

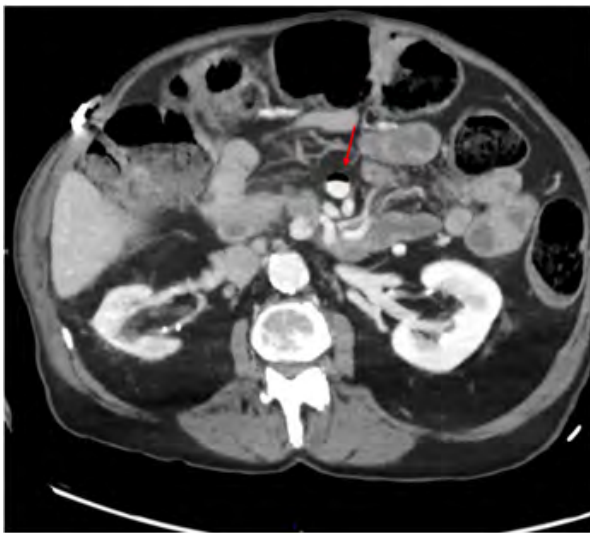

Figure 1:

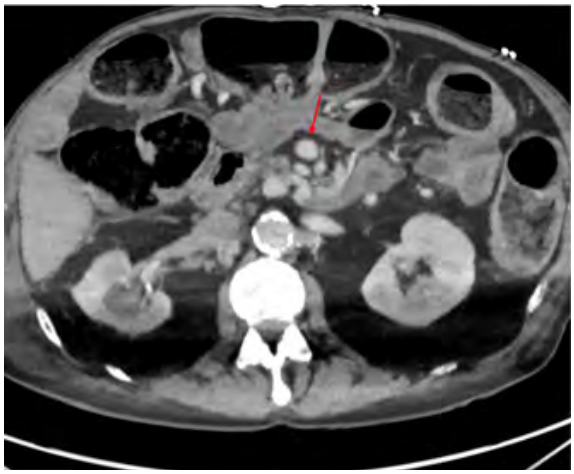

Figure 2:

4. Literature Review

Gastrointestinal manifestations of COVID-19 have been increasingly recognized, ranging from mild symptoms to severe complications such as aeromesenteria and ischemic colitis. A systematic review and meta-analysis by Mao et al. [1] including 6686 COVID-19 patients from 35 studies reported a pooled prevalence of digestive symptoms of 15%, nausea or vomiting (6%), diarrhea (9%) and loss of appetite (21%) being the three most common symptoms. Abdominal pain was seen in 3% of patients, and those with severe COVID-19 were more likely to present with abdominal pain (OR 7•10 [95% CI 1•93–26•07]; p=0•003). Pneumatosis intestinalis is defined as the presence of gas within the submucosal or mucosal wall of the intestine [2]. This condition is often due to a life threatening ischemia, a bowel obstruction or a sepsis [2]. When both a pneumatosis intestinalis and concomitant porto-mesenteric venous gas are present, the mortality rate reaches 68.2% in one study [2]. However, 25% of such patients presented with a reversible pneumatosis intestinalis. The prognostic value of this condition remains unclear as 25% of patients could recover. The physical examination plays a key role in the decision to operate or not in such patients. Only patients with clear signs of peritonitis should be operated. A supportive care should be the option for the other. In critically ill patients infected with COVID-19, Bhayana et al. reported that abdominal computed tomographies (CT) detected a pneumatosis or portal venous gas in up to 20% of the cases [3]. In a small case series of COVID-19 patients with pneumatosis intestinalis and portal venous gas on CT scan, Wong et al. described that all patients but one were managed with bowel rest and empiric antibiotics. The patient operated did not survive the procedure [4]. Overall, only 2 patients survived with complete resolution on interval CT scan.

5. Discussion

Our case report underscores the importance of gastrointestinal complications, in critically ill COVID-19 patients, as this condition is associated with a poor prognosis [4]. The atypical presentation of abdominal symptoms in the absence of peritonitis signs highlights the need for a high index of suspicion and prompt diagnostic imaging. Conservative management large spectrum antibiotics can be successful without the need for surgery. The decision to operated or not such a patient relies mostly on the clinical examination by a senior surgeon. Surgery should be reserved for patients presenting peritoneal signs. This is in line with the findings described by Della Seta et al. [2], proposing an individualized management of aeromesenteria based on the clinical presentation. Thus, low CRP levels, absence of porto-mesenteric veinous gas on CT scan and absence of COPD are associated with reversible pneumatosis, whereas patients with signs of peritonitis or suspicion of intestinal ischemia and perforation are candidates for explorative surgery. Our literature review highlights the multifaceted nature of gastrointestinal complications in COVID-19 patients and emphasizes the need of a comprehensive understanding of this disease to improve patient outcomes.

6. Conclusion

Most Covid-19 infections remain clinically silent or affect the lung tissues. However critically ill patients can develop abdominal symptoms complicating the clinical situation. Our report suggests that even in presence of an aeromesenteria, the decision to operate or not should rely on the clinical examination of the patient and not on the spectacular radiological images. When the patient does not present peritonitis, a conservative therapy should be proposed with close monitoring.

References

1. Mao R, Qiu Y, He JS, Tan JY, Li XH, Liang J, et al. Manifestations and prognosis of gastrointestinal and liver involvement in patients with COVID-19: a systematic review and meta-analysis. Lancet Gastroenterol Hepatol. 2020; 5(7): 667-78.
2. Della Seta M, Kloeckner R, Pinto Dos Santos D, Walter-Rittel TC, Hahn F, Henze J, et al. Pneumatosis intestinalis and porto-mesenteric venous gas: a multicenter study. BMC Med Imaging. 2021; 21(1): 129.
3. Bhayana R, Som A, Li MD, Carey DE, Anderson MA, Blake MA, et al. Abdominal Imaging Findings in COVID-19: Preliminary Observations. Radiology. 2020; 297(1): E207-15.
4. Wong K, Kim DH, Khanijo S, Melamud A, Zaidi G. Pneumatosis Intestinalis in COVID-19: Case Series. Cureus. 2020; 12(10): e10991.