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A Case Report on Covid-19 Induced Acute Pancreatitis

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ABSTRACT
COVID-19 is an infectious disease caused by SARS-COV2 which usually presents with mild to severe acute respiratory distress syndrome. Although it involves mainly the respiratory system, extrapulmonary involvement such as gastrointestinal manifestations are also reported [1]. We report a case of a 15-year-old boy diagnosed with COVID 19 who developed acute pancreatitis, who doesn't have any prior history of pancreatitis or any known risks.

Keywords: COVID-19, Acute Pancreatitis, SARS-CoV-2, CECT Abdomen

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a contagious illness caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), primarily targeting the respiratory system. Although predominantly a respiratory disease, several studies have reported gastrointestinal (GI) manifestations, such as nausea, vomiting, diarrhoea, and abdominal pain [1],[2]. A rare but increasingly recognized complication of COVID-19 is acute pancreatitis.

The pathophysiology of pancreatic injury in COVID-19 may be linked to the virus's affinity for angiotensin-converting enzyme 2 (ACE2) receptors, which serve as the functional receptor for SARS-CoV-2. The virus's glycosylated spike (S) protein binds to ACE2 receptors on host cell membranes, facilitating viral entry and subsequent immune activation. ACE2 is expressed in various tissues, including alveolar epithelial type II (AT2) cells in the lungs, the gastrointestinal tract (oesophagus, small intestine, colon), and the pancreas—particularly in the islet cells [2],[5].

High expression of ACE2 receptors in pancreatic islet cells makes them a potential target for direct viral injury. This interaction may lead to pancreatic inflammation through direct cytopathic effects or indirectly through an exaggerated systemic immune and inflammatory response [6]. Both mechanisms—direct viral-induced cytotoxicity and immune-mediated injury—are proposed contributors to COVID-19-associated pancreatitis.

CASE PRESENTATION

A 15-year-old male with no past medical history presented to the emergency department with high grade intermittent fever and generalized tiredness for the last five days. He also reported intermittent abdominal pain and nausea after two days of admission along with dry cough, He was tested RT PCR for SARS-CoV-2 and turned positive. Initial laboratory tests revealed a high C-reactive protein (CRP) of 81.4 mg/L,

and the total leukocyte count of 15,500/mm³. The patient was started with INJ Ceftriaxone 1g along with antipyretics and supportive care. D-dimer was significantly elevated at 1581.2 ng/mL.The initial serum lipase and serum amylase were found to be within normal limits. Abdominal ultrasound revealed hepatomegaly and a bulky pancreas. Based on these findings, a gastroenterology consult was obtained, and a contrast-enhanced CT (CECT) of the abdomen was advised to rule out acute pancreatitis. Despite ongoing therapy, the patient presented with continuous vomiting and abdominal pain. Serum Lactate levels were measured and found to be normal which was done to rule out acute mesenteric ischemia secondary to COVID-19. The stool routine was unremarkable. CECT abdomen and pelvis lead to confirmatory diagnosis of acute pancreatitis.

Due to elevated CRP antibiotics were escalated to intravenous Cefoperazone–Sulbactam 3g BD. Supportive measures were continued and after 3 days improvement in clinical condition of the patient was noticed and after 7 days all his respiratory and gastrointestinal symptoms subsided, and he was discharged.

DISCUSSION

COVID-19 is primarily known for its impact on the respiratory system and is widely studied as a lung pathogen. The most common symptoms include fever, cough, and dyspnoea. However, COVID-19 can also present with gastrointestinal (GI) manifestations such as nausea, vomiting, and abdominal pain, even in the absence of respiratory symptoms [2]. Mao R et al. reported that approximately 11.4% of patients with COVID-19 present with at least one GI symptom [3].

More rarely, COVID-19 has been associated with extrapulmonary complications, including acute pancreatitis. Wang F et al. found that elevated lipase levels were present in up to 17% of active COVID-19 cases, suggesting that pancreatic injury may be more common than previously thought in patients with COVID-19 pneumonia [4].

In the case discussed here, a 15-year-old boy presented with classic COVID-19 symptoms along with nausea and vomiting. Notably, serum amylase and serum lipase levels were within the normal range. However, a contrast-enhanced CT of the abdomen led to the final diagnosis of acute pancreatitis. Other common aetiologies of pancreatitis were ruled out, pointing toward a likely viral aetiology. The temporal relationship between the onset of gastrointestinal symptoms and confirmed COVID-19 infection supports this conclusion.

This case highlights the importance of recognizing atypical presentations of COVID-19, especially gastrointestinal and pancreatic manifestations. Early diagnosis through imaging and conservative management is essential, particularly in paediatric populations, where timely intervention significantly improves prognosis.

CONCLUSION

The documented reports of Covid-19 induced pancreatitis are very rare but a serious secondary infection that should be addressed. COVID-19 is a multisystem affecting infection that affects the respiratory system as well as the gastrointestinal system. In a COVID -19 patient all other possible causes of acute pancreatitis should be ruled out even though COVID -19 induced acute pancreatitis is very rarely reported. Timely imaging and supportive care are essential in improving outcomes.

REFERENCES

1. Choden U, Yangzom S, Pradhan G, Wangchuk P. Acute pancreatitis following -CoV-2 infection: A

case report. SAGE Open Medical Case Reports. 2023.
2. D'Amico F, Baumgart DC, Danese S, Peyrin-Biroulet L. Diarrhoea during COVID-19 infection: pathogenesis, epidemiology, prevention and management. Clin Gastroenterol Hepatol. 2020 Aug;18(8):1663–72.
3. 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 Jul;5(7):667–78.
4. 4.Wang F, Wang H, Fan J, Zhang Y, Wang H, Zhao Q. Pancreatic injury patterns in patients with coronavirus disease 19 pneumonia. Gastroenterology. 2020 Jul;159(1):367–370.
5. Liu F et al. (2020), who reported ACE2 expression in pancreatic islets, suggesting potential for direct viral cytotoxicity.
6. Hikmet F, Méar L, Edvinsson Å, Micke P, Uhlén M, Lindskog C. The protein expression profile of ACE2 in human tissues. *Mol Syst Biol*. 2020;16(7):e9610.