CASE REPORT

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Unmasking the Rare Culprit: A Case Report of Hypertriglyceridemia-induced Pancreatitis

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Abstract

Hypertriglyceridemia-induced pancreatitis is a rare but serious form of acute pancreatitis caused by elevated levels of triglycerides in the blood. Early diagnosis and management are essential to prevent disease progression and improve outcomes. We present a case of a 27-year-old male who presented to the emergency department with diffuse abdominal pain and associated symptoms. Laboratory tests and imaging studies revealed evidence of acute pancreatitis with tissue necrosis and reactive inflammation involving the duodenum. The patient was diagnosed with hypertriglyceridemia-induced pancreatitis and treated with aggressive fluid resuscitation, pain management, nutritional support, and insulin infusion. The patient had an uneventful medical intensive care unit follow-up and was discharged with full recovery. The case report highlights the importance of considering hypertriglyceridemia as a potential cause of acute pancreatitis and the utility of ultrasound and computed tomography scans in early diagnosis and management. Early intervention, including identification and treatment of the underlying cause of hypertriglyceridemia, aggressive fluid resuscitation, pain management, and nutritional support, is essential in preventing disease progression and improving outcomes.

Keywords: Hypertriglyceridemia, pancreatitis, triglyceride, case report

Introduction

Hypertriglyceridemic pancreatitis is a medical emergency that often requires urgent attention in the emergency department. It is a condition where high levels of triglycerides in the blood cause inflammation of the pancreas, leading to severe abdominal pain, nausea, vomiting, and elevated pancreatic enzymes.

The exact mechanism by which hypertriglyceridemia causes pancreatitis is not fully understood. However, it is believed that the accumulation of triglycerides in the pancreas leads to tissue injuryand inflammation, which can result in the development of acute pancreatitis [1].

The initial management of hypertriglyceridemic pancreatitis in the emergency department involves closely monitoring the patient's vital signs, managing pain, and initiating intravenous fluids to prevent dehydration and maintain an electrolyte balance. The patient is also typically fasted to rest the pancreas, and close monitoring for signs of complications, such as respiratory distress or shock, is essential [2].

In severe cases, plasmapheresis or lipid-lowering medication may be necessary to rapidly reducetriglyceride levels. Surgical intervention may also be required in some cases to remove damagedpancreatic tissue or drain fluid collection [3,4].

Prevention of hypertriglyceridemic pancreatitis in the emergency department involves recognizing patients with a history of hypertriglyceridemia or pancreatitis and initiating early treatment to prevent complications. Patients with a history of hypertriglyceridemia should be counseled on dietary modifications and medication compliance to prevent the development of acute pancreatitis [5].

Here, we present a young patient with hypertriglyceridemic pancreatitis. Our aim is to show the importance of early recognition and treatment for these patients.

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Case Report

A 27-year-old male with no past medical history presented to the emergency department with constant, diffuse abdominal pain surrounding the umbilicus for the last 4 h. He had associatedwith nausea but denied vomiting. On examination, the patient appeared not in severe pain or distress, and was oriented and cooperative. Chest sounds were clear, and the abdomen was soft and lax. The vital signs at admission were: blood pressure 111/58 mmHg, respiratory rate 20/minute, heart rate 115 beats per minute, oxygen saturation 96%, and body temperature 37°C. Laboratory tests showed elevated white blood cell count (12.3 10^3/uL), hemoglobin (20 g/dL), creatinine (119 umol/L) , and C-reactive protein (CRP) (90 mg/L) levels. The patient also had elevated alanine aminotransferase (67 U/L), aspartate transaminase (48 U/L), and lipase (738 U/L) levels. An abdominal ultrasound revealed a bulky pancreas with mild peripancreatic fluid and mild ascites. A subsequent abdominal computed tomography (CT) scan showed edematous pancreatitis with non-enhancing parts involving the distal body and tail representing tissue necrosis less than 30%. The CT scan also showed severe reactive inflammation involving all parts of the duodenum with a thickened wall and surrounding inflammation. Following the CT scan, the patient became more painful, tachycardic, and tachypneic, and was admitted to the medical intensive care unit (MICU). Repeat blood tests after 12 h showed improved hemoglobin and creatinine levels after intravenous fluid replacement, but CRP levels were dramatically increased. A lipid panel ordered for possible hypertriglyceridemic pancreatitis showed a triglyceride level of 39.6 mmol/L. The insulin infusion was started, and the patient had an uneventful MICU follow-up. The patient was later discharged with full recovery.

Discussion

In this case report, we discuss the importance of the early diagnosis of hypertriglyceridemia-induced pancreatitis and its management. Hypertriglyceridemia-induced pancreatitis is a rare but serious form of acute pancreatitis that is caused by elevated levels of triglycerides in the blood. Early diagnosis and management of hypertriglyceridemia are essential to prevent disease progression and improve outcomes [6].

In our case, the patient presented with diffuse abdominal pain and associated symptoms. Laboratory tests showed elevated levels of leukocytes, hemoglobin, creatinine, CRP, and pancreatic enzymes, including lipase. An abdominal ultrasound and subsequent CT scan revealedevidence of acute pancreatitis with tissue necrosis and reactive inflammation involving theduodenum.

Ultrasound is a commonly used imaging modality for the diagnosis of acute pancreatitis, and it can be used for many purposes including evaluation of the pancreatic edema, fluid, intraabdominal collection, and gastric content, etc. [7,8].

In the case presented, an abdominal ultrasound was performed, which revealed a bulky pancreas with mild peripancreatic fluid and mild ascites. These findings were consistent with acute pancreatitis and provided important diagnostic information to guide further management.

In addition to its diagnostic utility, ultrasound can also be useful for monitoring disease progressionand response to treatment. For example; serial ultrasound examinations can be used to track changes in the size and location of fluid collections, which can help guide decisions regarding theneed for drainage procedures or other interventions [7].

It is worth noting that while ultrasound is a valuable tool in the diagnosis and management of acute pancreatitis, it is not always sufficient on its own. In some cases, additional imaging studies such as CT or magnetic resonance imaging may be necessary to providea more detailed assessment of the extent of disease and any associated complications [7].

In the case presented, a subsequent abdominal CT scan was performed, which provided additional information about the extent of pancreatic involvement and the presence of duodenal inflammation.

Early intervention is crucial for managing hypertriglyceridemia-induced pancreatitis. The first stepin management is to identify and treat the underlying cause of hypertriglyceridemia, such as uncontrolled diabetes or certain medications. Additionally, aggressive fluid resuscitation, pain management, and nutritional support are essential in the management of acute pancreatitis [6].

Here, the patient's triglyceride levels were very high, and an insulin infusion was started to control hypertriglyceridemia. Insulin lowers triglyceride levels by increasing lipoprotein lipase activity, which hydrolyzes triglycerides in the bloodstream. This resulted in a significant reductionin triglyceride levels, which helped prevent disease progression and improve outcomes.

Conclusion

In conclusion, hypertriglyceridemia-induced pancreatitis is a rare but serious form of acute pancreatitis that requires early diagnosis and management. Early intervention, including identification and treatment of the underlying cause of hypertriglyceridemia, aggressive fluid resuscitation, pain management, and nutritional support, is essential in preventing disease progression and improving outcomes. The use of insulin to control hypertriglyceridemia may also be a useful adjunctive therapy for hypertriglyceridemia-induced pancreatitis.

Ethics

Informed Consent: Written consent was taken from the patient.

Peer-review: Externally peer-reviewed.

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