

CASE REPORT

Acute Haemorrhagic Pancreatitis Presenting as Sudden Death

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Abstract :

Acute pancreatitis is a catastrophic event for human life. It can cause acute and sudden inflammation of the pancreas with a danger of involving peripancreatic tissue and other organ systems. Acute pancreatitis symptoms range from mild disease to fatal outcomes in some cases. In such cases, the pain and collapse are so quick that the event quickly follows death. Multisystem organ failure is the main reason for early deaths. Acute hemorrhagic pancreatitis is not a common cause of sudden death, preceded by non-specific abdominal pain and vomiting symptoms. We here discuss the case of a young male who presented to the emergency department in an unconscious state with a history of severe abdominal pain. Autopsy examination revealed features of acute pancreatitis on gross and histopathological examination. Acute pancreatitis is a severe, life-threatening condition and most deaths are sudden and unexpected. Hence, a detailed investigation is required for the diagnosis.

Keywords : Pancreatitis; Sudden death; Forensic pathology; Autopsy; Medicolegal cases.

Introduction :

Acute hemorrhagic pancreatitis is an inflammatory condition presenting as a mild, self-limited condition to rapidly progressive disease with or without a fatal outcome. Mild acute pancreatitis is usually a self-limiting disease with rare mortality (less than 1% fatality), whereas severe acute pancreatitis or hemorrhagic pancreatitis is associated with a fatal outcome of 13.5-24%.^{1,2} The incidence of acute pancreatitis ranges between 30% and 42% in autopsy samples.³⁻⁶ Most of the available literature concerning acute pancreatitis dealt with clinical settings. Postmortem studies of fatal pancreatitis in medicolegal cases are insignificantly reported.^{4,5} We report a case of a male who presented to the emergency department in an unconscious state with a history of severe abdominal pain.

Case report:

A 30-year-old male was brought to the hospital's emergency department in an unconscious state with a history of severe epigastric pain present just before unconsciousness. The on-duty doctor examined him and declared him dead on arrival. The victim had a similar complaint one day before the event, for which he took some medication. He was a chronic alcoholic and was on metformin to control hyperglycemia owing to a history of diabetes.

The medicolegal autopsy on the deceased revealed an adult male

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aged 30 years, well-built and nourished, measuring 166 cm. in length and 79 kgs in weight. Rigor mortis was observed all over the body. Postmortem lividity was present over the back except for the pressure points and was fixed. No evidence of external injuries was found on the body. Other external findings were unremarkable.

The internal examination of the opening of the body showed generalized brain and kidney congestion. Both lungs were congested and oedematous. The liver was congested and cirrhotic on morphological assessment. The heart weighed 290 gm, and the lumen of the coronaries was patent. The stomach contained about 50 ml of reddish fluid. Gastric mucosa showed small submucosal hemorrhages along the greater curvature.

The pancreas measured 23X7.5 cm and weighed 175 gms. Gross examination showed a soft, pulpy, and oedematous pancreas with frank hemorrhages at places (Fig. 1). The cut section revealed areas of hemorrhagic infiltration of the interstitial tissue (Fig. 2). The lumen of pancreatic ducts were patent. Samples were taken from the pancreas and liver for histopathological examination. The pancreas sections showed cellular infiltration in the parenchyma. There was evidence of necrosis of pancreatic parenchyma, including acini and islets with extension into peripancreatic adipose tissue, suggestive of acute hemorrhagic pancreatitis (Fig. 3). The liver sections confirmed cirrhotic changes (Fig. 4), and sections from the lung showed congested blood vessels (Fig. 5). Toxicological analysis report of viscera at the Regional Forensic Science Laboratory tested positive for alcohol and negative for other drugs/poisons. Because of gross and histopathological examination, the cause of death in the present case was acute hemorrhagic pancreatitis and associated complications.

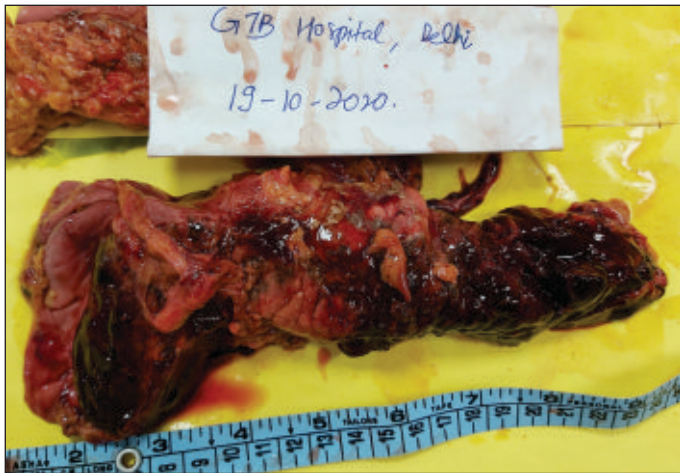


Figure 1. Showing soft, pulpy, oedematous with frank hemorrhages over the pancreas.

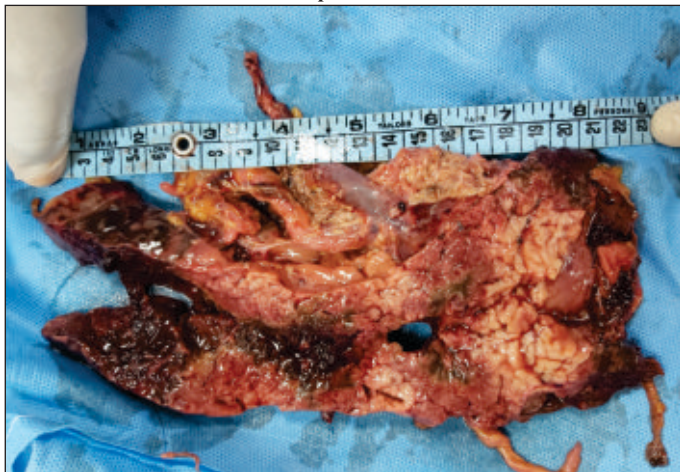


Figure 2. Showing areas of hemorrhagic infiltration in the interstitial tissue on the cut section.

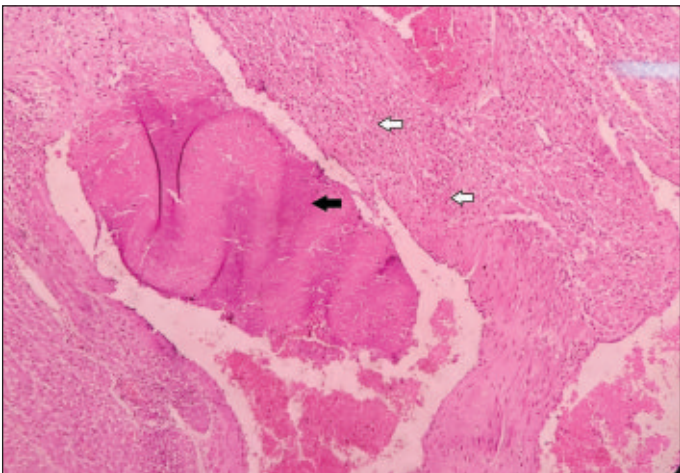


Figure 3. Showing cellular infiltration and necrosis of the pancreatic parenchyma.

Discussion:

Acute pancreatitis is a catastrophic event for human life. It can cause acute and sudden inflammation of the pancreas with a danger of involving peripancreatic tissue and other organ

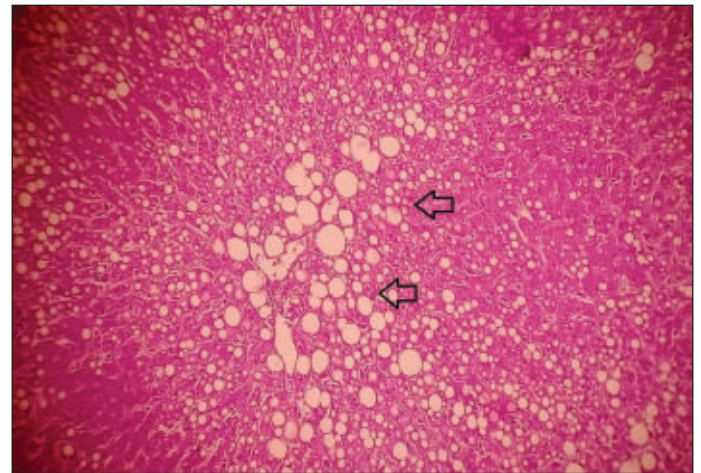


Figure 4. Showing numerous fat cells in the section of the liver (H&E, 10X view).

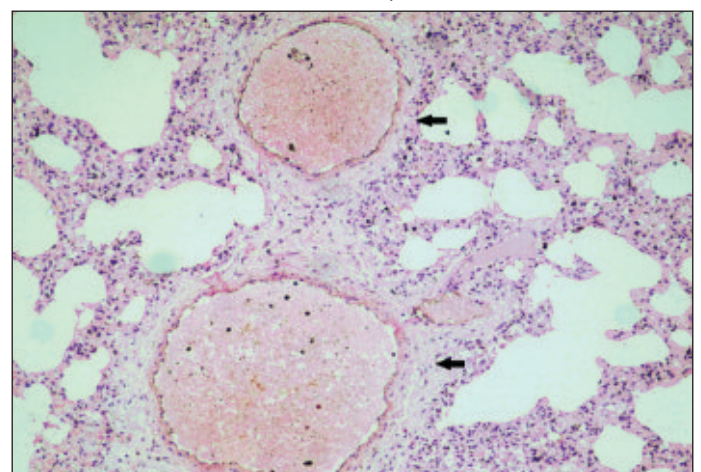


Figure 5. Showing congestion in the area of the lung (H&E, 10X view)

systems. Acute pancreatitis symptoms range from mild disease to fatal outcomes in some cases. Excessive alcohol consumption and gall stones are the most common causes of pancreatic injury, accounting for more than 85% of all patients with pancreatitis. The most common symptom of acute pancreatitis is a pain in the upper abdomen, followed by vomiting. In about 20% of patients with acute pancreatitis, life-threatening illness occurs due to severe damage to the pancreas.^{7,8}

The prevalence of diabetes mellitus in the acute pancreatitis group is also significantly higher.⁹ The fact that the deceased was on medication for diabetes in the present case should be considered an additional etiological factor affecting the patient's survival.

Multisystem organ failure is the main reason for early deaths. The pathology behind this damage may be linked to the release of various inflammatory mediators and cytokines from the damaged pancreas. The inflammatory mediators may be responsible for causing vascular injury, stasis of intravascular coagulation causing damage to vital organs. The critical finding in such death is the presence of pulmonary edema. The lungs' involvement is the most common extra-pancreatic pathology observed in acute pancreatitis, ranging from 20-100% in autopsy studies.¹⁰⁻¹² Other

local complications include gastrointestinal bleeding and adjacent bowel necrosis, including the transverse colon's involvement.^{13,14} The serum amylase level, ultrasonography, and computed tomography scan are mainstay diagnostic modalities in acute pancreatitis. Cases of sudden deaths due to acute pancreatitis are reported by authors where diagnosis could be made only at autopsy.^{7,12,15-18}

In the present case, the deceased had severe epigastric pain and was treated erroneously for gastritis when he had the first episode of pain and vomiting. He presented a second time to the health care facility with similar complaints in an unconscious state. The history of chronic alcohol consumption was present in the deceased. Gross findings in the pancreas and the other internal organs, such as pulmonary edema and necrosis of adjacent duodenum and transverse colon, supported the postmortem diagnosis of acute pancreatitis.

The histopathological findings very well corroborated the gross findings. At autopsy, a crucial diagnostic difficulty is postmortem autolysis of the pancreas. The rapid autolysis of the pancreas significantly affects its diagnosis on histopathological examination. The autopsy sample usually does not reveal typical acinar architecture. Inflammatory infiltrates, fat necrosis, and calcium deposits are the essential pathological features observed on light microscopy in acute hemorrhagic pancreatitis that differentiate acute hemorrhagic pancreatitis from postmortem autolysis of the pancreas.¹⁸

Acute hemorrhagic pancreatitis is not a common cause of sudden death, preceded by non-specific abdominal pain and vomiting symptoms. It is worth mentioning that acute pancreatitis is a vital differential diagnosis due to sudden death in the presence of fewer clinical manifestations in upper abdominal pain cases followed by vomiting. In such cases, the pain and collapse are so quick that the event quickly follows death.

Conclusion:

Acute pancreatitis is a severe and life-threatening condition. Hence, acute pancreatitis should be considered an underlying cause of sudden, unexpected deaths despite being less common in forensic settings. A high index of suspicion is required for clinical diagnosis. The forensic importance of acute hemorrhagic pancreatitis is related to the fact that most deaths are sudden and unexpected but usually follow severe upper abdominal pain episodes.

The gross findings of acute pancreatitis may overlap with those of postmortem autolysis of the pancreas, and therefore it is important to perform a microscopic examination to confirm the diagnosis. Postmortem serum amylase and lipase testing may support the diagnosis and explain the underlying pathophysiology.

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