

Acute Hemorrhagic Pancreatitis as a Rare Complication of Dengue Fever

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ABSTRACT

Dengue fever can lead to a range of symptoms, including severe manifestations such as dengue hemorrhagic fever. We report a rare case of severe dengue with hemorrhagic pancreatitis and pseudocyst formation in a 28-year-old woman. Initially presenting with fever, abdominal pain, and gastrointestinal symptoms, the patient developed worsening pain, vomiting, and an abdominal mass. Imaging revealed a pancreatic mass, and elevated amylase and lipase confirmed pancreatitis. Interventional radiology drained the hemorrhagic fluid from the suspected pseudocyst, leading to patient improvement and eventual discharge. This uncommon complication of acute hemorrhagic pancreatitis in dengue fever has not been previously documented.

KEYWORDS: dengue fever; pancreatitis; hemorrhagic cyst; pigtail catheterization; liver enzymes

INTRODUCTION

Dengue fever is a mosquito-borne viral infection prevalent in tropical countries. The disease is caused by the Dengue virus, which belongs to the *Flaviviridae* family and has 4 serotypes.¹ While many cases are asymptomatic, dengue can also manifest with severe symptoms, although fatalities are rare. The World Health Organization classifies dengue into 2 categories: dengue (with or without warning signs) and severe dengue. Severe dengue can lead to life-threatening complications such as plasma leakage, fluid accumulation, respiratory distress, severe bleeding, and organ dysfunction.² With only a handful of cases being reported, acute pancreatitis is an uncommon presentation of dengue fever.^{3,4}

CASE REPORT

A 28-year-old woman presented to the emergency department with a 2-day history of fever, abdominal pain, vomiting, and loose stools. Physical examination revealed pallor, icterus, diffuse abdominal tenderness, and a palpable soft mass in the epigastrium and right hypogastrium. Laboratory investigations confirmed dengue fever and thrombocytopenia.

A contrast-enhanced computed tomography (CT) scan showed a well-defined mass in the pancreatic head and uncinate process, displaying rim enhancement and hetero-attenuating appearance indicative of hemorrhagic contents (Figure 1). Mild perifocal inflammation and ascites were observed. Elevated serum amylase and lipase levels suggested pancreatic involvement while minimally raised serum cancer antigen 19.9 (47.9) values were noted (Table 1). The patient was transferred to the medical intensive care unit for management of obstructive jaundice and gastric outlet obstruction.

The CT scan was re-evaluated, indicating a suspected pseudocyst of the pancreas with a potential bleeding vessel. An abdominal angiogram ruled out active bleeding, and pigtail catheterization was performed under ultrasound guidance to drain the hemorrhagic fluid from the cyst. The patient exhibited symptomatic improvement, and subsequent imaging showed a reduction in cystic lesion size, with a drainage output of 250–300 mL/day. Intravenous antibiotics, analgesics, and octreotide were administered during the hospital stay. The patient's condition improved further, with resolution of the abdominal mass, subsiding jaundice, and the ability to tolerate a soft oral diet.

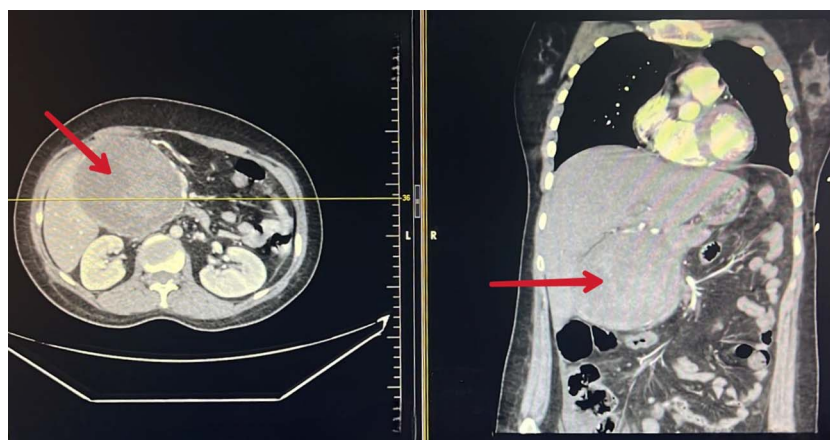


Figure 1. Contrast-enhanced abdominal computed showing a well-defined mass (red arrow) in the pancreatic head and uncinate process, displaying rim enhancement and hetero-attenuating appearance indicative of hemorrhagic contents.

A repeat contrast-enhanced abdominal CT scan on day 21 revealed further reduction in cystic lesion size and communication between the main pancreatic duct and the cyst (Figure 2). The patient received medical gastroenterology opinion and was recommended to undergo main pancreatic duct stenting after 2 weeks, in view of persisting jaundice. After 25 days, the patient was discharged in a stable condition, tolerating an oral diet with the pigtail catheter in place. Serum amylase and lipase levels normalized. Subsequent follow-up contrast-enhanced abdominal CT showed a significant interval reduction in the pancreatic pseudocyst size.

DISCUSSION

Dengue virus can cause a spectrum of diseases, including dengue fever, dengue hemorrhagic fever, and dengue shock

syndrome. The pathogenesis of dengue involves viral tropism, but our understanding is limited because of the lack of relevant animal models.¹

Acute pancreatitis is a rare manifestation of dengue, usually occurring as a complication of dengue hemorrhagic fever. Diagnosis of acute pancreatitis is based on abdominal pain, elevated serum lipase or amylase levels, and characteristic imaging findings.¹ Pancreatic involvement in dengue may result from direct invasion of the virus, pancreatic damage from dengue shock syndrome, autoimmune reactions, or pancreatic fluid outflow obstruction.^{3,5} Autopsy findings have shown the presence of the virus in various tissues, including the pancreas. Pancreatitis associated with an infectious etiology requires satisfying specific criteria for definitive, probable, or possible diagnosis.⁶

Our patient presented with fever, abdominal pain, and vomiting. Laboratory investigations confirmed thrombocytopenia and positive virus antigen. CT scan revealed an encapsulated mass in the pancreas, diagnosed as a pseudocyst resulting from pancreatitis. Pseudocysts are fluid-filled sacs that rarely develop within or adjacent to the pancreas, causing indigestion, bloating, and abdominal pain. Drainage is the preferred treatment of pancreatic pseudocysts.⁷

The treatment of dengue depends on the patient's illness phase and presence of warning signs. Patients with warning signs, pregnant women, infants, and patients with diabetes require hospitalization. Intravenous fluids are initiated for patients with warning signs, and colloids are given to those in shock. Blood transfusion may be necessary for bleeding complications, and platelet transfusion is warranted when the platelet count decreases below 20,000 cells/ μ L.⁸ Medications such as aspirin, nonsteroidal anti-inflammatory drugs, antiviral drugs, and anticoagulants should be avoided in dengue.⁹

Pancreatic cysts can be asymptomatic or present with abdominal pain, nausea, and vomiting. Asymptomatic pseudocysts

Table 1. Evolution of laboratory values of the patient from admission to discharge

Parameters	Before pigtail catheterization	After pigtail catheterization
Hemoglobin (g/dL)	14.20	10
Platelet ($\times 10^3/\mu$ L)	12	612
Total bilirubin (mg/dL)	3.42	1.22
Direct bilirubin (mg/dL)	2.75	0.72
Indirect bilirubin (mg/dL)	0.67	0.50
Serum AST (U/L)	175	23
Serum ALP (U/L)	154	126
Serum GGT (U/L)	758	89
Serum ALT (U/L)	123	24
Serum amylase (U/L)	973	81
Serum lipase (U/L)	4,111	31

ALP, alkaline phosphatase; ALT, alanine transferase; AST, aspartate aminotransferase; GGT, gamma glutamyl transferase.

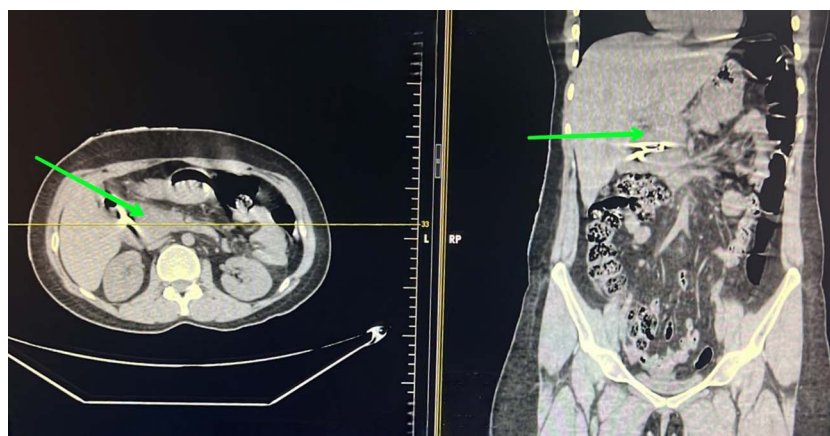


Figure 2. Contrast-enhanced abdominal computed tomography showing reduction in size of pseudocyst (green arrow) after pigtail catheterization.

typically regress without treatment while symptomatic pseudocysts are managed with endoscopic or surgical drainage. Endoscopic drainage is preferred because of its minimally invasive nature.⁷ Hemorrhagic cysts can occur when the fluid inside the pseudocyst erodes artery walls, potentially leading to pseudoaneurysms.¹⁰ Angiographic embolization is an effective treatment of pseudoaneurysms.¹¹ In our case, an abdominal angiogram did not detect any abnormal vessels, so drainage of the hemorrhagic pseudocyst through pigtail catheterization was performed, resulting in mass reduction and patient improvement. The patient was discharged and evaluated with a repeat CT scan after 1 week, which showed a significant reduction in pseudocyst size. The pigtail catheter was subsequently removed, and the patient remained complaint-free during follow-up.

Although gastrointestinal symptoms are common in dengue, acute pancreatitis is an uncommon complication. Awareness of this condition is important, and monitoring serum amylase and lipase levels is recommended, especially in the presence of pain and vomiting. Timely recognition and understanding of the pathogenesis of dengue-related pancreatitis can help manage complex systemic manifestations and ensure appropriate treatment.

DISCLOSURES

Author contributions: H. Khataniar was actively involved in the acute care and follow-up of the patient. He was also involved in critical revision of the manuscript and approved the final version for submission. S. Vellankal was involved in literature review, drafting of the initial manuscript, follow-up care of the patient, and creation of the final version of the manuscript for submission. H. Khataniar is the article guarantor.

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Informed consent was obtained for this case report.

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