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Case Report

Existence of acute pancreatitis as a complication of dengue: a case report and literature review

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ABSTRACT

Dengue is an endemic viral infection in tropical regions, characterized by fever, myalgia, rash, and thrombocytopenia. Although most cases follow a favorable clinical course, severe complications may arise during the critical phase. Among these, acute pancreatitis is a rare but important manifestation. We present the case of a young woman with laboratory-confirmed dengue infection who, during the critical phase, developed intense and persistent abdominal pain. Laboratory tests revealed a marked elevation of pancreatic enzymes, and imaging studies confirmed the diagnosis of acute pancreatitis. She was managed conservatively with bowel rest, intravenous fluids, and analgesia, resulting in a favorable outcome without the need for invasive interventions. This case highlights the importance of considering acute pancreatitis as a potential complication in patients with dengue who present with severe abdominal pain. Early recognition and appropriate supportive treatment are essential to reduce morbidity and ensure a positive clinical outcome in such cases.

Keywords: Pancreatitis, Dengue, Fever, Abdominal pain

INTRODUCTION

Dengue is an arboviral disease caused by a flavivirus transmitted by *Aedes aegypti*, widely distributed in Latin America and other tropical regions.[1] Its clinical presentation is variable, and although most cases resolve without complications, a small percentage progress to severe forms, usually during the critical phase, when capillary leakage, severe thrombocytopenia, and, in some cases, shock occur.[2,3,8]

Among the less frequent complications of dengue is acute pancreatitis, whose pathophysiology is not yet fully understood. Various theories have been proposed, including direct viral invasion, inflammatory edema, ductal obstruction, and even immune-mediated injury.[4,6] Given its rarity and nonspecific clinical presentation, clinicians must maintain a high index of suspicion in dengue patients presenting with intense abdominal pain.

CASE REPORT

Patient information

A 31-year-old female with no relevant medical history was admitted with persistent fever, asthenia, and abdominal pain. A positive NS1 antigen test confirmed dengue. Physical examination revealed a maculopapular rash described as white islands in a red sea (Figures 1 and 2).

On the 5th day of illness, she developed intense epigastric abdominal pain, nausea, and vomiting, which initially improved with analgesics. Two days later, the abdominal

pain worsened, radiating in a belt-like pattern to the back, aggravated by fatty foods. She was hospitalized, and lab tests showed: platelets 37,000/mm³, hematocrit 32.9%, amylase 586 U/l, and lipase 1322.7 U/l.

Figure 1: Intense reddish rash with skin edema predominating on knees and legs, accompanied by purpuric lesions.

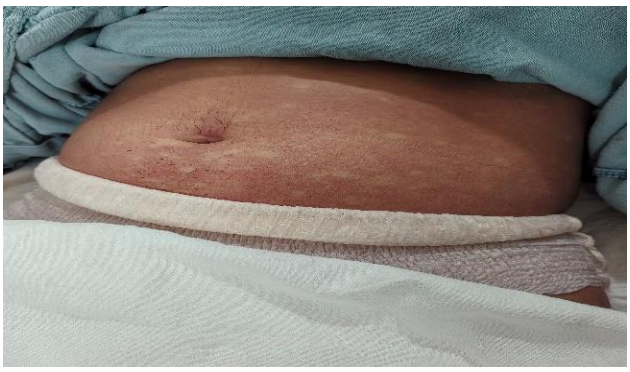

Figure 2: Appearance of "white islands in a red sea" rash.

A contrast-enhanced abdominal computed tomography (CT) scan showed diffuse pancreatic edema and peripancreatic fluid, without collections (Figure 3). Based on laboratory and imaging findings, a diagnosis of acute pancreatitis secondary to dengue virus infection was made.

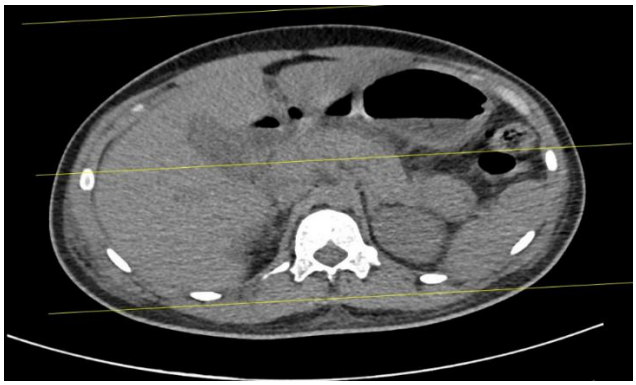

Figure 3: Axial abdominal CT scan showing peripancreatic fluid and diffuse pancreatic edema.

Laboratory and imaging findings

The findings in the laboratory are marked in the Table 1.

CT scan

CT scan revealed diffuse pancreatic edema and peripancreatic fluid, and no collections.

Final diagnosis

Acute pancreatitis secondary to dengue virus infection during the critical phase.

Management and outcome

The patient was managed with bowel rest, IV hydration, analgesia, and monitoring. She evolved favorably, with progressive decrease in pancreatic enzymes and complete resolution of symptoms upon discharge.

Table 1: Laboratory findings.

Laboratory parameters	Patient value	Reference range	Interpretation
Platelets (/mm³)	37 000	150, 000–400, 000	Thrombocytopenia
Hematocrit (%)	32.9	36–46	Mild
Amylase (U/l)	586	25–110	Elevated
Lipase (U/l)	1322.7	<150	Markely elevated

DISCUSSION

Dengue infection follows a clinical course divided into three phases: febrile, critical, and recovery. The febrile phase, lasting 2 to 7 days, is characterized by high fever due to active viremia. At the end of this phase, the critical phase begins, typically between days 3 to 7 of illness, during which plasma leakage into interstitial and third spaces occurs.[2,3,8] Most severe complications occur during this phase.[9]

Acute pancreatitis secondary to dengue infection is a rare complication but has been documented in several case reports.[4,7] Proposed pathophysiological mechanisms include direct viral invasion of pancreatic acinar cells, local inflammatory edema, and vascular compromise due to hemoconcentration and shock.[4,5] Additionally, it has been postulated that the dengue NS1 antigen may induce a local inflammatory response mediated by cytokines such as IL-6 and TNF-α, contributing to endothelial dysfunction

and increased vascular permeability, facilitating pancreatic involvement.[6,10]

Another important hypothesis is that edema in the ampulla of Vater or pancreatic duct may obstruct pancreatic juice flow, triggering pancreatitis.[4] Histopathological evidence supports both direct destruction of pancreatic cells by the virus and secondary injury from inflammation and cellular edema.[5] These findings align with autopsy reports of patients who died from severe dengue with multiorgan involvement.[10]

Severe abdominal pain in dengue patients may also result from other causes such as hepatitis, cholecystitis, or intestinal perforation, so a broad differential diagnosis must be considered.[2,3] In this case, elevated pancreatic enzymes, the clinical context, and CT findings confirmed the diagnosis of pancreatitis.

Although pancreatic involvement is not part of the classic predictors of severe dengue, recent studies have shown that it may be associated with increased risk of complications, especially in patients with early visceral involvement.[9] Ocular complications such as dengue uveitis have also been linked to more severe systemic inflammation, suggesting an exaggerated immune response in some patients.[11]

CONCLUSION

Although uncommon, acute pancreatitis is an important complication that may arise during the critical phase of dengue. Its clinical presentation is often nonspecific, making it essential to maintain a high index of suspicion in patients with severe abdominal pain, especially if accompanied by elevated pancreatic enzymes and compatible imaging findings. As shown in the available reports, early and conservative management is generally successful.

In endemic regions such as Latin America, this complication should be included in the differential diagnosis of abdominal pain in dengue patients, as timely identification can significantly impact prognosis.

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