Dengue Fever Presenting as Acute Pancreatitis

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Abstract
A 56-year-old non-alcoholic male was admitted with complaints of severe abdominal pain and was diagnosed with acute pancreatitis after blood investigations and a computed tomography scan of the abdomen. He developed a high-grade fever on the third day of admission, and serology tested positive for dengue. Treatment for dengue was instituted, leading to a good response and complete resolution of pancreatitis. The patient has been doing well and has had no recurrence of pancreatitis at the end of one year of follow-up.

Key Words: Amylase, Dengue fever, Pancreatitis

Introduction
Even in the modern era of medicine, presentation of an acute abdomen remains a challenge for the surgeon. Though acute pancreatitis (AP) is a common cause of acute abdomen, AP of infective etiology is relatively uncommon [1]. Dengue fever (DF) is a common cause of febrile illness in Eurasia and is often accompanied by abdominal symptoms [2]. Here we present a case of DF where the initial presentation was AP.

Case Report
A 56-year-old agriculturist and a non-alcoholic presented with complaints of severe abdominal pain one day in duration. The pain was continuous and stabbing in nature and felt as if it was in the epigastrium and radiating to the back. The patient had never experienced similar pain in the past. General examination was unremarkable. Abdominal examination revealed tenderness and guarding in the epigastrium with no rebound tenderness. Liver dullness was not obliterated, and there was no palpable mass, organomegaly or free fluid. A provisional differential diagnosis of acute gastritis and AP was made, and the patient was further tested. Blood investigations were normal except for serum amylase and lipase levels, which were elevated to 832 and 1298 units/dL, respectively, with normal LFT. A contrast enhanced CT scan of the abdomen showed bulky pancreas with peripancreatic fat stranding, which is suggestive of acute pancreatitis (Figure 1). The gall bladder and extra-hepatic biliary apparatus was normal. A diagnosis of AP was made and the patient was managed conservatively. On the third day, the patient started to have a continuous high-grade fever associated with a generalized body ache and sore throat with chills and rigors. The total leukocyte count was repeated and was found to be normal. A workup for pyrexia indicated positive dengue serology. All other causes for fever with abdominal pain, such as leptospirosis and typhoid, were ruled out by relevant investigations. The patient was treated for his symptoms, responded well, and recovered completely from the fever and abdominal pain in eight days.

Discussion
AP is an acute inflammatory process of the pancreas with varying involvement of other regional tissues or remote organs. While common causes of AP are gall stones and alcohol, infective agents also cause a small proportion of cases [3]. Pancreatitis in any infectious disease could be (a) definite pancreatitis if there is surgical or radiological evidence of pancreatitis, (b) probable pancreatitis if there is biochemical evidence in the form of more than three-fold elevated serum amylase...
or lipase and characteristic symptoms, or (c) possible pancreatitis if there is only asymptomatic biochemical evidence [4].

An infectious agent should be suspected as the cause of AP if the characteristic syndrome due to the infectious agent is present, which is seen in 70% of cases [5]. Criteria suggested for associating pancreatitis with an infective etiology include (a) finding the organism in pancreas or pancreatic duct, which is ‘definitive criteria’; (b) culture of the organism from the pancreatic juice or blood or serological evidence combined with characteristic clinical or epidemiological setting, which is ‘probable criteria’; and (c) culture of the organism from other body sites or serological evidence of infection, which is ‘possible criteria’ [6].

Dengue infections are caused by four antigenically distinct dengue virus serotypes, DEN 1, 2, 3, and 4, and belong to the family Flaviviridae [6]. Dengue virus is transmitted from human to human through bites of *Aedes aegypti* and *Aedes albopictus* mosquitoes, and infections caused by dengue virus can be asymptomatic or symptomatic. Symptomatic infections could be classical DF or dengue hemorrhagic fever (DHF), which may or may not be associated with shock. All ages and both sexes are susceptible to DF, and children usually have a milder course compared than adults [5]. Following an average incubation period of 5-6 days, classical symptoms of DF appear, including sudden onset of high-grade fever with chills, intense headache, muscle and joint pain, retroorbital pain, anorexia, generalized weakness, abdominal pain, dragging pain in the inguinal region, sore throat and general depression [3]. Fever is typically but not inevitably followed by remission for a few hours to 2 days (biphasic curve). Skin eruptions appear in 80% of cases during remission or during the second febrile phase, which lasts for 1-2 days.

Abdominal pain is a common symptom (40%) in dengue infections and is more commonly associated with DHF. Some of the causes for abdominal pain in dengue infections include hepatitis, acute acalculous cholecystitis, acute pancreatitis, and colitis. Studies have reported the incidence of AP in dengue infections to be 14-29% [2]. Our patient was treated successfully and is completely symptom-free after one year.

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**References**