Dengue Fever Presenting With Acute Pancreatitis: A Rare Complication Of Dengue Virus

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***Abstract*—Dengue virus has various manifestations ranging from mild fever with thrombocytopenia to life threatening features like hemorrhagic manifestations with vasodilatory shock. Among many complications of dengue fever acute pancreatitis has been rarely discussed which we would like to present here as an uncommon complication of Dengue fever. A 47 years old businessman with no significant past medical history was admitted to Bangladesh Medical College Hospital with complaints of fever with thrombocytopenia along with abdominal pain. Besides the presence of clinical and laboratory features suggestive of dengue fever, the appearance of characteristic abdominal pain, high levels of serum amylase and lipase, ultra-sonogram findings suggested the diagnosis of an acute pancreatitis. In the initial phase of his illness this complication occurred which has subsequently undergone to remission with conservative management. Here we want to bring lights upon on this unusual complication of dengue fever for which timely management can help to reduce morbidity and mortality.**

Keywords—Dengue fever, acute pancreatitis, thrombocytopenia

I. INTRODUCTION:

Acute pancreatitis can be defined as the inflammation of pancreas. Among its various common etiologies like gall stones, alcohol, post ERCP, infective causes with viruses and bacteria remain as a rare possibility of infective pancreatitis. Pointers to the infective cause of pancreatitis lie in the typical sign and symptoms of the disease produced by the organism and features of pancreatic inflammation occurring simultaneously [1], [2]

Dengue is a mosquito-borne arthropod disease endemic in the regions of South-East Asia, Western Pacific regions and some parts of America as well. Its presentation can range from mild fever with malaise to hemorrhagic shock and death [3]. Many atypical complications have been mentioned under dengue fever like Viral encephalitis, myocarditis and Guillain-Barre syndrome [4]. The gastrointestinal manifestations of dengue virus usually encounter as gastritis, hepatitis, enteritis and acute hepatic failure but pancreatic involvement has been rarely mentioned.

Here we would like to report the development of acute pancreatitis in a 47 years old businessman who presented with fever and thrombocytopenia along with diffuse, dull-aching and epigastric pain radiating towards back.

II. CASE REPORT:

A 47-year-old businessman was admitted to Bangladesh Medical College Hospital, Dhanmondi, Dhaka with complaints of continuous high grade fever (highest recorded temperature was 105 degree Fahrenheit) with chills and rigor, malaise, myalgia, retro-orbital pain and headache for the last 4 days. He also complained about acute onset of severe continuous dull aching epigastric pain radiating to the back since 3 days. Abdominal pain was accompanied by several episodes of non-bilious vomiting containing undigested food particles but not associated any blood. On query he has not mentioned about any passage of black-tarry stools during this period. There was no previous history of jaundice and alcohol intake. He had neither been on any long term drug therapy nor had taken any non-steroidal anti-inflammatory drugs in the recent past. He was a nonsmoker.

On Examination, the patient was ill-looking, conscious and oriented to time, place and person. He was febrile with a temperature of 103^0F and moderately dehydrated. There were no skin rashes but flushing was present. He was hypotensive with a blood pressure of 85/65 mmHg on admission and capillary refill time was four seconds, pulse rate was 112/min with low volume and respiratory rate was 22 breaths/min.

Abdominal examination revealed distended with epigastric tenderness and guarding but no rebound tenderness. Liver dullness was not obliterated, and there was neither any organomegaly nor palpable mass. No free fluid was found during abdominal examination. Bowel sounds were sluggish. The respiratory, cardiovascular and central nervous system examination revealed no abnormalities. Dengue hemorrhagic fever with shock along with acute gastritis was considered as a probable diagnosis and investigated accordingly.

Dengue viral serology test was positive for Dengue NS1 Antigen. The blood investigations of the patients were given in Table 1.

Table 1: Laboratory Investigations of the Dengue Patient

Investigations	Day 1	Day 3	Day 5	Day 7	Day 9	Day12
Hemoglobin (g/dL)	12.4	12.2	12.0	12.0	12.0	12.0
Total leucocyte count (10^9/L)	4.5	6.0	13.8	12.0	11.0	8.7
Platelet count (10^9/L)	30	25	50	75	130	190
Mean Corpuscular volume (fL)	76	75	76	78		79
Mean corpuscular hemoglobin concentration(g/dL)	25	25	26	30		33
Hematocrit (%)	46.7	47	46	45.8		41
Random Blood Sugar (mmol/L)	6.7	5.6	5.8	6.1		5.5
Sodium (mmol/L)	131	128	130	135		
Potassium (mmol/L)	3.2	3.5	4.0	4.2		
Creatinine (mg/dL)	1.8	1.6		1.2		
SGPT (IU/L)	56	50		48		40
SGOT (IU/L)	100	98		60		45
Alkaline Phosphatase (IU/L)	133	128				
Serum Protein (g/dL)	4.56	5.2				
Serum albumin (g/dL)	3.0	3.11				
Serum Amylase (U/L)		557	430	212		122
Serum Lipase(U/L)		441	410	325		95
C-reactive protein	49	56	75	50		20
Total calcium	8.5					
Cholesterol (mg/dL)	150		148			
High-density-lipoprotein (mg/dL)	28		28			
Low-density lipoprotein(mg/dL)	100		100			
Triglycerides(mg/dL)	227		225			
Prothrombin time	16					
INR	1.08					
Dengue NS1 Ag	Positive					

An ultra-sonogram of the abdomen showed an enlarged, edematous, hypoechoic pancreas with mild peri-pancreatic fluid collection compatible with acute pancreatitis. There was no ascites and chest radiograph did not reveal any pleural effusion. Electrocardiogram showed sinus tachycardia.

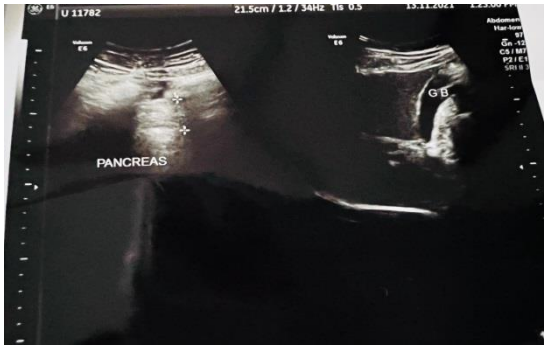

Figure 1: USG features suggestive of acute pancreatitis

The patient was initially managed with intravenous fluid and antibiotics. Serum platelet count and other blood parameters monitoring was done. Surgical opinion was taken regarding the management of acute pancreatitis, and it was decided to manage the patient conservatively with IV fluids, antibiotics and keeping the patient nil by mouth for 3 days and was subsequently started on a liquid followed by soft diet thereafter. The abdominal pain subsided and the patient responded well to treatment and after spending 12 days in the hospital recovered uneventfully from dengue and pancreatitis. On subsequent follow-up he was found to be normal.

III. DISCUSSION:

Dengue fever is caused by RNA Dengue virus which has got 4 serotypes (DEN 1,2,3 and 4). Among various manifestations of dengue- fever, headache, body ache, abdominal pain, diarrhea and vomiting regarded as the commonest. Fever usually persists for 4-5 days followed by 1-2 days of Critical phase then the Recovery phase [5]. Dengue fever can be classified as Dengue fever (DF), Dengue hemorrhagic fever (DHF) and Dengue shock syndrome (DSS). Dengue fever comprises benign non-specific presentation like fever, malaise, body ache with a positive serology. DHF presents with severe body ache, arthralgia along with skin manifestations like patechiae, purpura and positive tourniquet test. It can be also associated with other hemorrhagic manifestations of various system like gum bleeding, malaena and menorrhagia. DSS can be defined as

the presence of shock with or without hemorrhagic manifestations [6].

Among various atypical manifestations of dengue fever like acute hepatic failure, hepatic encephalopathy, acute respiratory distress syndrome, GBS, acalculous cholecystitis, myocarditis, Kawasaki disease-only a few case reports of acute pancreatitis complicating DF has been reported worldwide. In 2002 during the outbreak of DHF in Taiwan three acute pancreatitis patients were found as a complication of DF. Isolated cases of acute pancreatitis as a complication of DF have been reported in some countries like Thailand, Indonesia, Colombia and India [7], [8].

The mystery of the mechanism of acute pancreatitis in DF is still remain unresolved. There are many predictions about its pathogenesis. Some thought it is due to the direct cytotoxic effect by the virus into pancreatic cells and some are mentioned about the damage of pancreatic duct by the DSS. The role of autoimmune process in here cannot be ignored as well. In DF there is edema around the ampulla of Vater which also causing hamper in the outflow of the pancreatic fluid [8], [9].

Our 47-year-old male patient with no significant previous history that could predispose to acute pancreatitis was found with elevated serum amylase, lipase level and typical usg features during the period of DF with positive NS1 Antigen indicate towards the diagnosis of acute pancreatitis. With the help of the conservative treatment the patient recovered well without any residual damage.

Pancreatitis is associated with high mortality if remains undiagnosed and untreated. It can be remaining undiagnosed among DF patients presented with abdominal pain as it is an atypical presentation. If there is any clinical suspicion of acute pancreatitis, then rapid diagnostic tests should be implemented to reach the diagnosis as soon as possible and it will also fasten the rate of recovery in a conservative way.

IV. CONCLUSION:

Dengue has got many atypical and unknown presentations till now. So we need to create more awareness among all the physicians specially in those who reside in endemic areas. That's why we tried to present this rare case here so that it can enable the patients to receive adequate monitoring and supportive care from the beginning of the disease onset and eventually decrease the rate of morbidity and mortality.

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