

DENGUE EXPANDED SYNDROME: AN UNUSUAL PRESENTATION

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Abstract:

Dengue fever is a mosquito borne viral infection found in tropic & sub-tropic regions. The symptomatic dengue infection follows an uncomplicated course; however, unusual manifestations of this disease are now being increasingly reported as expanded dengue syndrome which incorporates wide spectrum of uncommon presentation of this common disease which does not fall into either dengue shock syndrome or dengue hemorrhagic fever. We report a case of a 30 year old lady who presented with high grade fever, rash, diffuse abdominal pain & vomiting, who ultimately developed shock and features of multi organ failure. We diagnosed her as a case of expanded dengue syndrome with multi organ failure (hepatitis with very high transaminase levels, pancreatitis, acalculous cholecystitis, coagulation failure & acute kidney injury) with septicemia. With prompt diagnosis and aggressive management, this potentially fatal patient was cured.

Key Words: Dengue fever, expanded dengue syndrome, multi organ failure

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Introduction

Dengue fever is a viral infection of rainy season, transmitted by the mosquito *Aedes Aegypti*. *Aedes Aegypti* mosquito is found in tropic & subtropic regions & is commonly known to flourish due to unplanned urbanization & poor control measures. The symptomatic dengue infection follows an uncomplicated course; however, unusual manifestations of this disease are now being increasingly reported as expanded dengue syndrome which incorporates wide spectrum of uncommon presentation of this common disease. Expanded dengue is a terminology developed in the WHO guidelines of year 2012.¹ Unusual manifestations of patients with severe organ involvement such as liver, kidneys, brain or heart associated with dengue infection have been increasingly reported in dengue hemorrhagic fever (DHF) and also in dengue patients who do not have evidence of plasma leakage. These unusual manifestations maybe associated with co-infections, co-morbidities or complications of prolonged shock and can be clubbed under the expanded dengue syndrome. The unusual manifestations may be underreported or unrecognized

or not related to dengue. These atypical manifestations may be potentially serious and may result in increased rates of morbidity and mortality, which can be preventable with prompt diagnosis and judicious management. Therefore, clinicians should be aware of these atypical manifestations.

We report a case of expanded dengue syndrome in a 30 year old lady with hepatitis with very high level of liver enzymes, acute kidney injury and septicemia. The purpose of our case reporting is to throw light on atypical manifestations of dengue, especially during ongoing epidemics.

Case Report

A 30-year-old lady presented with high grade fever for 5 days, together with vomiting and diffuse abdominal pain for 3 days. She had aches and pain of body from the onset of fever. She was conscious but drowsy, she had rash all over the body and was having heavy flow of menstrual cycle. She was non-diabetic, normotensive. On examination both of her eyes were congested, Pulse- 112/min, normal volume, BP- 100/60mmHg, Temp 104.4^oF, Respiratory rate 22/

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Table 1
Investigation Profile

TC		7640 x 10 ⁹ /L	Urine	Pus Cell	0-2/HPF
DC: N+L+M+E+B		38%+55%+5%+2%+0%	R/M/E	RBC	Plenty
Haemoglobin		9.6 g/dL	X- Ray Chest		Right sided pleural effusion
Platelet Count		12,000/mm ³	USGW/A		Moderate ascites , cholecystitis
ESR		40 mm	Viral Markers	HBsAg	Negative
Haematocrit		50%		Anti HAV IgM	Negative
LDH		16,611 U/L		Anti HEV IgM	Negative
Liver Function Panel	SGOT	8957 U/L		Dengue NS1 Ag	Negative
	SGPT	3438 U/L		Dengue IgM	Positive
	S. Albumin	3.07 gm/dl			
	S. bilirubin	1.2 mg/dl			
Renal Function Panel	Blood Urea	11.6mmol/L	ABG	pH	7.3
	S. Creatinine	1.9 mg/dL		PCO2	18
Serum Electrolytes	Na ⁺	126 mmol/L		PO2	112
	K ⁺	4.1 mmol/L		HCO3	9.3
	HCO ³⁻	20 mmol/L		BE	11.4
	Ca ⁺⁺	8.8 mg/dL			
	Mg ⁺⁺	2.6 mg/dL			
Coagulation Profile	PT/ INR	35s(control-12 sec)			
	APTT	58s			
	FDP	65			
	D-Dimer	>5			
Pancreatic Profile	S. Lipase	458 U/L			

min. There was diffuse abdominal tenderness without any organomegaly. Breath sound was diminished in the lower part of both lungs.

Initial management was done by IV Normal saline, IV antiemetic, IV Proton Pump Inhibitor, Paracetamol as per WHO Dengue Fever protocol.

On the day of admission, she developed respiratory distress. On the second day of presentation she developed profound shock with reduced urinary output. She was then transferred to the intensive care unit for better monitoring and management.

The investigations of her illness are depicted in Table 1. Very high level of liver enzymes (AST>ALT) with normal bilirubin & negative viral markers indicate this anicteric hepatitis is due to dengue infection, which is a component of expanded dengue syndrome. Investigation profile revealed the patient had been suffering from septicaemia with multi organ failure (liver, kidney, haemopoietic system, pancreas, gall bladder) due to dengue infection, which is evident by positive **Dengue IgM**.

We diagnosed the patient as Expanded Dengue Syndrome and promptly started management symptomatically. Ultimately the patient required two units of apheresis platelet, four units of platelet concentrate, six units of FFP along with other managements.

From the 6th day of presentation she showed signs of improvement both clinically and biochemically. She was later discharged with full recovery.

Discussion

Dengue is the most rapidly spreading mosquito borne viral disease in the world ² and as larger proportion of population is being affected, more unusual manifestations are being reported. Presentation of dengue viral infection is variable, ranging from asymptomatic viral infection to life threatening dengue shock syndrome. In 2011 revised WHO guidelines, dengue was divided into dengue fever (DF), dengue hemorrhagic fever (DHF) without shock or with shock (DSS) and expanded dengue syndrome ³. Expanded

dengue syndrome is a new entity added to the classification system to incorporate a wide spectrum of unusual manifestations of dengue infection affecting various organ systems including gastrointestinal, hepatic, neurological⁴, pulmonary, renal system & other isolated organ involvements expressed as complications of severe profound shock or associated host conditions or co-infections.

The atypical manifestations noted in dengue can be multisystemic and multifaceted. In clinical practice, the occurrence of atypical presentation should prompt us to investigate for dengue. Knowledge of expanded dengue helps to clinch the diagnosis of dengue early, especially during ongoing epidemics, avoiding further battery of investigations.⁵

Our patient's initial presentation was with high grade fever, rash and generalized body ache, which was typical of dengue fever. On the third day of her illness, she developed diffuse abdominal pain and vomiting. Investigations revealed markedly elevated level of liver enzymes with normal serum bilirubin level & raised serum lipase level. Ultrasonography of whole abdomen revealed presence of ascites & acalculous cholecystitis. So, there was acute anicteric hepatitis, pancreatitis & cholecystitis- all contributing to her abdominal pain.

The patient was admitted on the 5th day of her illness, so Dengue NS1 antigen was negative. Dengue IgM antibody was positive, indicating primary infection. Altered liver function test is common in dengue, but such a high level of AST & ALT is very unusual. AST elevation is usually greater than ALT in dengue⁶, as we found in our patient. Gastrointestinal manifestations of expanded dengue syndrome are variable including hepatic dysfunction, acalculous cholecystitis, fulminant hepatic failure, acute pancreatitis, diffuse peritonitis and so on⁷. The levels of aminotransferases (usually not more than 100 U) generally reach maximum values around the ninth day after the first episode of fever and gradually taper off toward normality within two weeks. DSS is associated with higher mortality than DHF⁷. Acalculous cholecystitis has been documented in many case reports. Asymptomatic gall bladder edema as an ultrasound examination finding can be a surrogate marker of dengue before arrival of laboratory investigations report. Cholecystectomy is not advised, however, a close watch for impending gangrenous gall bladder is a must⁸.

Renal involvement in dengue is uncommon as compared to other organ involvement. The commonest renal presentation is that of a pre-renal acute kidney

injury (AKI) related to third space fluid loss and dehydration⁹. Our patient also developed AKI with hyponatraemia with haematuria. There was evidence of plasma leakage, as evidenced by ascites, pleural effusion and raised haematocrit level. The patient had severe thrombocytopenia & raised prothrombin time & APTT. Bleeding manifestations were in the form of haematuria & menorrhagia.

Due to multisystem involvement with septicemia in this seropositive dengue patient, we labeled her as Expanded Dengue Syndrome and managed aggressively in ICU with all possible supportive measures. Though her overall condition was very critical, from the 6th day of presentation, she showed signs of improvement both clinically and biochemically. This is the beauty of clinical medicine & rewards for the clinicians- bringing back to life.

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