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Extended fever in Dengue hemorrhagic fever: A Masked Case of Clinical Importance

Medicine

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ABSTRACT

Fever is the major presenting feature in most of the Dengue cases. Most of the classification of severity and selection of diagnostic tests depends upon the day of presentation since onset of fever. Prolonged fever in Dengue without other co-infection is not commonly known in the literature. We observed an interesting case of dengue of prolonged fever which needed an extensive review of literature to get to the right clinical diagnosis and management. We expect that these kinds of cases could be counteracted by many of our colleagues and this observation would prevent many clinicians to go for unnecessary and costly tests.

KEYWORDS:

Dengue hemorrhagic fever, Prolonged febrile illness, Vitamin B12 deficiency

Introduction:
Usually dengue patients develop fever that lasts for 2 to 7 days. And, fever that lasts for more than 7 days is usually not that due to dengue. These kinds of cases when searched generally have a co-infection with other pathogen or some superimposed bacterial co-infection acquired after dengue in the course. However, in this case, patient presented with history of fever for 2 weeks and subsequently diagnosed to have dengue. Here is the case discussion which gives a good insight to keep into our mind simple things first before proceeding and searching for other etiology.

Case Observation:
A 19-year old male, resident of New Delhi, India presented to our medicine emergency complaining of a 2-week history of fever, headache, myalgia and loss of appetite, and 1 day history of pain abdomen and malena. He was otherwise fit and well with no significant past medical or family history. The patient reported no other symptoms and did not take any regular medication. Examination revealed a pulse rate of 92 beats/minute and a blood pressure of 110/70 mmHg. He was noted to be febrile with a temperature of 99.8_0 Fahrenheit. Oxygen saturations were 100% on room air with no signs of respiratory distress. He had visibly pale conjunctiva. Cardiovascular examination revealed normal heart sounds with no added sounds. Auscultation of the chest revealed vesicular breath sounds with no added sounds. On abdominal examination, there was no organo-megaly or ascites. Neurological examination was normal with was no evidence of neck stiffness or altered mental status. Admission blood tests revealed pancytopenia with a raised mean cell volume. Also notable was a mild hyperbilirubinemia and increased prothrombin time.

Investigations-
His various test on initial days of admission has been shown in table 1, in the text. His dengue IG M was +ve on 4/9/14 (day 20 of fever). Widal test was negative. Chest X-Ray showed no significant abnormality. Urine – routine and microscopic examination revealed no abnormality. Blood culture and Urine culture were sterile. USG abdomen showed Mild hepatosplenomegaly, but no ascites. Test to give special attention in our case were a MCV of 110 and serum bilirubin of 2.9 with direct 0.9 and indirect of 2.0. Peripheral smear revealed mild to moderate aniso-poikilocytosis, macro ovalocyte, and no parasite was seen. Based on the lab and clinical parameters, a clinical diagnosis of vitamin B12 deficiency was made.

Clinical progression: Initially, the patient was started on supportive care, Blood transfusion, Platelet rich plasma transfusion. He was also put on empirical intravenous broad spectrum antibiotics. However, he continued to remain intermittently febrile for which various causes of the same was discussed bedside and worked up (Table 2). Later, he was also started on Vitamin B12/folic acid therapy and responded well.

Table. 1: showing various laboratory parameter of the patient on 3 consecutive dates after admission

Parameter	Day1	Day2	Day3
Hemoglobin	4.7	6.0	6.6
Hematocrit	14.4	17.5	19.7
Platelet count	61	43	51
TLC	2.5	2.4	2.4
PT	16.6	15.3	15.8
Sodium	140	137	141
Potassium	4.5	4.1	4.3
Urea	38	21	19
Creatinine	0.8	0.8	0.9
Total bilirubin	2.2	1.5	0.5
SGOT	66	48	39
SGPT	38	34	34
ALP	137	143	135
Total protein	6.7	704	6.8
Albumin	4.9	5.6	5.2
Globulin	1.8	1.8	1.6

Discussion and conclusion: Common causes of fever we usually think in these kinds of clinical scenarios in Indian Context are as follows:

- Pneumonia
- Koch's
- Enteric fever
- Urinary tract infection(UTI)
- Upper respiratory tract infection(URTI)
- Lower respiratory tract infection(LRTI)
- Gastroenteritis

Table 2: showing common risk factor/causes which are generally worked for an associated prolonged fever in our day to day clinical ward cases in a case of dengue.

Risk Factor	Cause
None (healthy)	Upper or lower respiratory tract infection Gastrointestinal infection Urinary tract infection Skin infection
Hospitalization	(IV catheter infection) Urinary tract infection Pneumonia Atelectasis Infection or hematoma at the site of surgery Deep vein thrombosis Diarrhea Drugs Transfusion reaction Pressure sores
Travel to areas where an infection is common (endemic areas)	Malaria Viral hepatitis Disorders that cause diarrhea Typhoid fever Dengue fever (less common)
Exposure to insects or animals that carry disease-causing organisms, called vectors	Ticks: Rickettsiosis, ehrlichiosis, anaplasmosis, Lyme disease, babesiosis, or tularemia Mosquitoes: Arboviral encephalitis Wild animals: Tularemia, rabies, Fleas: Plague Domestic animals: Brucellosis, cat-scratch disease, Q fever, or toxoplasmosis Birds: Psittacosis Reptiles: Salmonella infection Bats: Rabies or histoplasmosis
A weakened immune system (immunocompromised)	Viruses: Varicella-zoster virus or CMV Bacteria: pneumococci, meningococci, Staphylococcus aureus,Pseudomonas aeruginosa, Nocardia, or mycobacteria Fungi: Candida, Aspergillus, Zygomycetes, Histoplasma, Coccidioides, or Pneumocystis jirovecii Parasites: Toxoplasma gondii, Strongyloides stercoralis, Cryptosporidium, microsporidia, or Isospora belli
Drugs that can increase heat production	Amphetamines Cocaine Phencyclidine Methylenedioxymethamphetamine Antipsychotic drugs Anesthetics
Drugs that can trigger fever	Beta-lactam antibiotics Sulfa drugs Phenytoin Carbamazepine Procainamide Quinidine Amphotericin B Interferons

However, Vitamin B12 deficiency is also one factor which can present as pyrexia. And, in this case, patient was diagnosed as dengue hemorrhagic fever with severe anemia. So, the cause of extended fever in this case could be due to superadded Vitamin B12 deficiency. Fever is a feature of megaloblastic anaemia that has been described previously in the literature and is thought to be more common in patients with moderate to severe anaemia and thrombocytopenia. This is of particular importance in patients with pyrexia and pancytopenic picture, who are routinely treated as febrile

neutropenia with broad spectrum antibiotics. The level of pyrexia usually correlates with degree of anaemia and resolves one to three days after adequate vitamin supplementation.

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No conflict of interest

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