

A Passport of Dengue Fever to Riyadh A Case Report of a Boy who Travelled to Riyadh Carrying Dengue Fever

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Abstract

This is a report of 13 years old boy who presented to emergency room with Fever, frontal headache, mild cough and muscular pain for 5 days. He just returned 6 days ago from a holiday in India. There was no active bleeding and his systemic Examination was entirely normal. Blood work showed Thrombocytopenia (29000/ml) and neutropenia (1160/ml). He was treated with intravenous fluid and supportive measures. After 5 days of admission his symptoms improved spontaneously and discharged home in stable condition. His dengue virus serology showed positive IgM and IgG.

Keywords: Dengue fever; Flaviviredea; Dengvaxia

Background

Dengue fever (DF) is one of the mosquito-borne viral diseases. It is an acute febrile illness caused by single positive-stranded RNA Viruses of the family Flaviviredea. The mosquito flourishes during, rainy seasons, in water filled flower pots, plastic bags and cans. One mosquito bite can cause the disease [1,2].

DF can be a symptomatic or minimally symptomatic in children under 15 years of age. In one study of school children in rural Thailand, 53 % of dengue virus infections were not associated with a recognized febrile illness despite intense active surveillance [3]. Symptomatic cases usually present 4-7 days after mosquito bite with fever, headache, retro-orbital pain, body, joints pain, maculopapular rash, nausea, vomiting, diarrhea and cough [4,5]. More serious presentation is hemorrhagic fever, in which there are an increased vascular permeability leading to plasma leakage syndrome, marked thrombocytopenia ($<100,000$ cells/mm³), fever lasting two to seven days and hemorrhagic manifestations, some severe cases might progress to multi-organ failure & Dengue shock syndrome [6]. The diagnosis is based on high index of suspicion while viewing patients traveling from endemic areas, clinical picture mentioned before and some helpful laboratory findings that include; high liver transaminases, leukopenia and

thrombocytopenia [7-9]. Management is usually supportive. Complicated cases might need Intensive Care management. The first dengue vaccine Dengvaxia (CYD-TDV) is now licensed in Mexico, Philippine and Venezuela It a tetravalent vaccine that has been registered for use in individuals 9-45 years of age living in endemic areas. It is given in three doses at 0/6/12 month. It is still under evaluation by WHO for further approval [10]. Preventive medicine is reported to be effective through community education, warnings about transmitting mosquito and its control, especially in areas of endemicity [11,12].

Case Presentation

A 13 year old Indian boy who returned from India 6 days back, presented with fever, frontal headache, mild cough and muscular pain for 5 days. There was no significant past medical history, and he is fully vaccinated. Physical examination revealed fully oriented boy with no jaundice or pallor. He refused to ambulate because the muscular pain without localizing signs. His vital signs were all within normal limits for his age. Systemic examination was unremarkable. The full blood count showed severe thrombocytopenia PLT 29000/ml, mild neutropenia ANC 1160/ml. In view of the significant travel history and endemicity. Screening for Tuberculosis, Malaria, Hepatitis (A,B and C), EBV, Parvovirus, Cytomegalovirus and dengue fever were done. Supportive treatment was commenced in form of intravenous fluids, regular pain killer. On the following days, repeated CBC showed gradual increase in platelet count as shown in the following table:

Table 1: repeated CBC showed gradual increase in platelet count

	Day 1	Day 2	Day 4	Day 5	Day 10
Platelets count	29 × 10 ⁹ /μl	26 × 10 ⁹ /μl	49 × 10 ⁹ /μl	122 × 10 ⁹ /μl	154 × 10 ⁹ /μl

Haematology team was involved, and they advised to observe the platelets count on daily bases, and if platelets is still dropping, bone marrow aspiration would be warranted. On day 4 post admission his clinical symptoms improved, he remained a febrile and started to walk normally. Serology IgG and IgM were negative for Epstein Barr virus, Cytomegalovirus and Parvovirus B19. Malaria smear was negative. PPD and Quantiferon TB test

were negative. Dengue virus IgG and IgM were positive. He was discharged home in stable condition with follow up in Infectious disease clinic. When seen in the clinic 2 months after discharge, he was well and his CBC showed normal platelet count at 290000/mm³.

Discussion

Dengue fever virus (DENV) has 4 major serotypes (DENV 1–4) which are different from each other. Three dengue serotypes out of four (DENV 1–3) have been found in Middle Eastern countries including Saudi Arabia and Yemen. Interestingly, DENV-1 strain isolated in Saudi Arabia exhibited a high genetic similarity with DENV-1 strain isolated from Asian population, suggesting a widespread distribution of the Asian genotype. Dengue disease and its serious hemorrhagic form became endemic in the Western and Southern regions of the Kingdom [13,14]. In Saudi population, Evidence extracted from risk factors and distribution studies showed that young males are commonly affected. The main reported clinical features were fever, vomiting and frontal headache. Thrombocytopenia, leukopenia and elevated transaminases were the common associated laboratory findings [14].

It is estimated that up to 80 million persons were infected annually although marked under reporting results in the notification of much smaller figures. Currently dengue is endemic in all continents except Europe. Epidemic dengue hemorrhagic fever (DHF) occurs in Asia, the Americas and some Pacific islands. The incidence of DHF is much greater in the Asian countries than in other regions. In Saudi Arabia, the most abundant responsible vector is *Aedes aegypti* (57%), followed by *Aedes vexans* (28.56%), *Aedes vittatus* (11.90%), *Aedes caspius* (2.477%) [15].

Epidemiologic studies have shown that the risk of severe disease (haemorrhagic fever and Shock syndrome) is significantly higher during a secondary dengue virus infection than during a primary infection [16]. Many protective measures were discussed, including increase awareness about the disease in endemic areas, wearing long covered dressings to cover areas liable for the bites, especially during morning, precautions in hospitals treating patients with DF, eliminating infectious sources as water containers such as flower pots, water storage containers and discarded tires, advices for fashion designers to design the clothes in way that help covering areas liable for bites and promoting it through public figures in the community [17].

Conclusion

Suspicion of such diseases should be high whenever a travelling history is suggestive while dealing with cases of fever in travellers. In the era of globalization and wide movement of immigration, an increase awareness of the health professionals about tropical and endemic diseases would improve our ability to diagnose and improve the outcome of different conditions

and this will save our health resources by avoiding unnecessary investigations. Health care providers should think outside the box, especially while dealing with traveller patients.

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