

CASE REPORT

A DENGUE SHOCK PATIENT WITH NEGATIVE SEROLOGY AND POLYMERASE CHAIN REACTION (PCR) TESTS

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Abstract. A 6-month-old Thai girl presented with clinical manifestations of dengue shock syndrome (DSS) with encephalopathy and urinary tract infection. Serology and PCR tests were negative whereas dengue virus type 2 was isolated. In cases of highly suspected dengue infections, viral isolation should be done even when serological and PCR tests are negative.

Dengue hemorrhagic fever (DHF), an acute febrile illness of children, is characterized by fever, a hemorrhagic diathesis and a tendency to develop a potentially shock syndrome (Thisyakorn and Thisyakorn, 1994b). Diagnosis is based on clinical and basic laboratory criteria in most patients, and the etiological diagnosis can be confirmed by serological tests whereas PCR tests and viral isolation are seldom needed. There have been reports since 1976 of DHF with unusual manifestations, mainly cerebral and hepatic symptoms (Pancharoen and Thisyakorn, 1998b). We report herein a case of dengue shock syndrome with unusual manifestation and co-infection. Viral isolation was needed to confirm the diagnosis since serology and PCR tests for dengue virus disclosed negative results.

A 6-month-old Thai girl, who was previously healthy, was admitted at Chulalongkorn Hospital on June 23, 1996 because of 7-day fever and alteration of consciousness. Physical examination revealed

a febrile, drowsy infant with hepatomegaly, nuchal rigidity and positive Brudzinski's sign. Investigations showed a hematocrit of 43.9%, platelet count of 66,500 /cubic millimeter, pyuria, right pleural effusion and normal cerebrospinal fluid (CSF) findings. Twelve hours after admission, she developed hypotension and convulsion which were corrected and controlled by intravenous fluid and anticonvulsant, respectively. Urine culture reported later showed significant growth of *Escherichia coli*, sensitive to ceftriaxone given. Dengue shock syndrome with unusual manifestation and urinary tract infection were diagnosed. Serologic tests for dengue and Japanese encephalitis B viruses using enzyme-linked immunosorbent assay (ELISA) technique were considered negative (titer < 40) in serum and CSF of the patient. PCR for dengue antigen was performed and also showed negative result. However, viral isolation was achieved in one out of ten mosquito heads, demonstrating dengue virus type 2 (Table 1).

Table 1
Serology test, PCR test and dengue isolation.

Date	ELISA (serum)				ELISA (CSF)				PCR for dengue	Dengue isolation
	D-IgM	D-IgG	JE-IgM	JE-IgG	D-IgM	D-IgG	JE-IgM	JE-IgG		
23-6-96	12	0	1	1	0	2	1	2	neg	pos
26-6-96					8	15	2	8		
25-7-96	22	0	0	5						

D = dengue virus, JE = Japanese encephalitis virus, IgM = immunoglobulin M, IgG = immunoglobulin G, neg = negative, pos = positive

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Although unusual neurologic manifestations in dengue infections have been reported from Thailand and other Southeast Asian countries (Kho *et al.*, 1981; Nimmanitya *et al.*, 1987; Thisyakorn and Thisyakorn, 1994a), nuchal rigidity is very uncommon and a positive Brudzinski's sign has never been mentioned.

Co-infections in dengue patients are rare. There was only one study reporting twelve cases of various infections associated with dengue infection (Pancharoen and Thisyakorn, 1998a). Co-infections in dengue patients may lead to missed or delayed diagnosis and treatment of dengue infection. Moreover, some may conclude atypical presentations caused by co-infections as unusual manifestations of dengue infections. Therefore, one should rule out co-infections before diagnosing unusual manifestations.

Positive isolation of dengue virus with negative serology and PCR tests is extremely unusual but possible. One should proceed with other investigation tools such as viral isolation in highly

suspicious cases of dengue infection even when serologic and PCR tests are negative.

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