Dengue Clinical Presentation

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PRESENTATION

History

Patients with dengue will have a history of living in, or recent travel to, a region where the disease is endemic. The incubation period is 3-15 days (average, 4-7 days); symptoms that begin more than 2 weeks after a person departs from an endemic area probably are not due to dengue. [4]

Many patients experience a prodrome of chills, erythematous mottling of the skin, and facial flushing (a sensitive and specific indicator of dengue fever). The prodrome may last for 2-3 days. Children younger than 15 years usually have a nonspecific febrile syndrome, which may be accompanied by a maculopapular rash. Classic dengue fever begins with sudden onset of fever, chills, and severe (termed breakbone) aching of the head, back, and extremities, as well as other symptoms. The fever lasts 48-96 hours and may reach 41°C. Fever that lasts longer than 10 days probably is not due to dengue.

Pain and other accompanying symptoms may include any of the following [4] :

- Fever
- Headache
- Retro-orbital pain
- General body pain (arthralgias, myalgias)
- Nausea and vomiting (however, diarrhea is rare)
- Rash
- Weakness
- Altered taste sensation
- Anorexia
- Sore throat
- Mild hemorrhagic manifestations (eg, petechiae, bleeding gums, epistaxis, menorrhagia, hematuria)
- Lymphadenopathy

Rash in dengue fever is a maculopapular or macular confluent rash over the face, thorax, and flexor surfaces, with islands of skin sparing. The rash typically begins on day 3 and persists 2-3 days.

Fever typically abates with the cessation of viremia. Occasionally, and more commonly in children, the fever abates for a day and then returns, a pattern that has been called saddleback fever. A second rash may occur within 1-2 days of defervescence, lasting 1-5 days; it is morbilliform, is maculopapular, spares the palms and soles, and occasionally desquamates. Recovery is complete but slow, with fatigue and exhaustion often persisting after the fever has subsided. The convalescent phase may last for 2 weeks.

Most dengue hemorrhagic fever occurs in patients younger than 10 years. [4] The initial phase of dengue hemorrhagic fever is similar to that of dengue fever and other febrile viral illnesses. Shortly after the fever breaks (or sometimes within 24 hours before), signs of plasma leakage appear, along with the development of hemorrhagic symptoms such as bleeding from sites of trauma, gastrointestinal bleeding, and hematuria. Patients also may present with abdominal pain, vomiting, febrile seizures (in children), and a decreased level of consciousness.

If left untreated, dengue hemorrhagic fever most likely progresses to dengue shock syndrome. Common symptoms in impending shock include abdominal pain, vomiting, and restlessness. Patients also may have symptoms related to circulatory failure.
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Physical Examination

Dengue fever presents in a nonspecific manner and may not be distinguishable from other viral or bacterial illness. According to the Pan American Health Organization (PAHO), the clinical description of dengue fever is an acute febrile illness of 2-7 days duration associated with two or more of the following [51] :

- Severe and generalized headache
- Retro-orbital pain
- Severe myalgias, especially of the lower back, arms, and legs
- Arthralgias, usually of the knees and shoulders
- Characteristic rash
- Hemorrhagic manifestations
- Leukopenia

Additional findings may include the following:

- Injected conjunctivae
- Facial flushing, a sensitive and specific predictor of dengue infection
- Inflamed pharynx
- Lymphadenopathy
- Nausea and vomiting
- Nonproductive cough
- Tachycardia, bradycardia, and conduction defects

Up to half of patients with dengue fever develop a characteristic rash. The rash is variable and may be maculopapular or macular. Petechiae and purpura may develop as hemorrhagic manifestations. Hemorrhagic manifestations most commonly include petechiae and bleeding at venipuncture sites.

A tourniquet test often is positive. This test is performed by inflating a blood pressure cuff on the upper arm to midway between diastolic and systolic blood pressures for 5 minutes. The results are considered to be positive if more than 20 petechiae per square inch are observed on the skin in the area that was under pressure. Other hemorrhagic manifestations include nasal or gingival bleeding, melena, hematemesis, and menorrhagia.

Neurologic manifestations such as seizures and encephalitis/encephalopathy have been reported in rare cases of dengue infection. Some of these cases did not display other typical features of dengue infection. Other neurologic complications associated with dengue infection include neuropathies, Guillain-Barré syndrome, and transverse myelitis.

Dengue hemorrhagic fever

Findings for dengue hemorrhagic fever are similar to those for dengue fever and include the following:

- Biphasic fever curve
- Hemorrhagic findings more pronounced than in dengue fever
- Signs of peritoneal effusion, pleural effusion, or both

Minimal criteria for the diagnosis of dengue hemorrhagic fever, according to the World Health Organization (WHO), are as follows [52] :

- Fever
- Hemorrhagic manifestations (eg, hemoconcentration, thrombocytopenia, positive tourniquet test)
- Circulatory failure, such as signs of vascular permeability (eg, hypoproteinemia, effusions)
- Hepatomegaly

In addition, conjunctival injection develops in approximately one third of patients with dengue hemorrhagic fever. Optic neuropathy has been reported and occasionally results in permanent and significant visual impairment. [53] Pharyngeal injection develops in almost 97% of patients with dengue hemorrhagic fever. Generalized lymphadenopathy is observed.

Hepatomegaly is present more often in dengue shock syndrome than in milder cases. Hepatic transaminase levels may be mildly to moderately elevated. Encephalopathy is a rare complication that may result from a combination of cerebral edema, intracranial hemorrhage, anoxia, hyponatremia, and hepatic injury.

Dengue shock syndrome

Findings of dengue shock syndrome include the following:

- Hypotension
- Bradycardia (paradoxical) or tachycardia associated with hypovolemic shock
- Hepatomegaly
- Hypothermia
- Narrow pulse pressure (< 20 mm Hg)
- Signs of decreased peripheral perfusion

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Complications

Complications include the following:

- Dengue hemorrhagic fever (DHF): Characterized by plasma leakage, thrombocytopenia, and hemorrhagic manifestations such as petechiae, purpura, and mucosal bleeding.
- Dengue shock syndrome (DSS): A severe form of DHF in which plasma leakage leads to shock, characterized by narrow pulse pressure, hypotension, and potentially fatal outcomes if not managed promptly.
- Severe bleeding: Major bleeding events, such as gastrointestinal bleeding (hematemesis, melena), can occur, especially in the context of profound shock and thrombocytopenia.
- Organ involvement: Severe dengue can involve multiple organs, leading to complications such as hepatitis, myocarditis, pancreatitis, and encephalitis.

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