Fever in a Returned Traveler: An “Off the Cuff” Diagnosis

(See pages 1004–5 for Photo Quiz)

Figure 1. Islands of normal skin surrounded by blanching erythema on the abdomen of a 21-year-old woman who returned from travel in Sri Lanka.

Diagnosis: Dengue fever.

The most commonly diagnosed tropical infections that cause fever in the returned traveler are malaria, dengue, typhoid, and viral hepatitis [1]. The epidemiology may change with appropriate pretravel vaccination and use of malaria prophylaxis. Dengue fever was diagnosed in our patient because serological testing of an acute-phase serum specimen demonstrated a strongly positive IgM titer of 21.33 (normal, <0.90).

The combination of fever, myalgias, retro-orbital pain, and erythroderma with thrombocytopenia and leukopenia in a person returning from an area where dengue is endemic suggests a diagnosis of dengue fever. A “tourniquet sign” (i.e., petechiae originating at sites of pressure, reflecting endotheliitis) may be observed during physical examination (figures 1 and 2). Dengue fever is the most common arboviral illness, and, in 2002, the World Health Organization estimated that there were 50 million infections with dengue virus, 500,000 cases of dengue hemorrhagic fever, and 15,000 deaths secondary to dengue infection per year [2]. The infection is transmitted most commonly through a human-mosquito-human cycle involving the mosquito Aedes aegypti. The incubation period of dengue virus is generally 4–7 days. The short incubation period is an important epidemiological clue. The diagnosis is confirmed by serological test results, and it is defined by a 4-fold increase in acute- and convalescent-phase IgG titers or detection of a specific IgM response [3]. Dengue hemorrhagic syndrome (DHS) is marked by plasma leakage (hemoconcentration and serous effusions), thrombocytopenia, and bleeding [4]. The risk for DHS increases with subsequent exposure to different serotypes of dengue virus, which has implications for persons with a history of dengue fever who travel to regions where dengue is endemic. Despite our patient’s petechiae and positive tourniquet test result, she did not meet the criteria for DHS, given her lack of increased vascular permeability.

A. aegypti is often found in urban settings, so, in contrast to malaria, dengue is still a risk for people traveling only to urban areas. The most important measure for prevention of dengue infection is avoidance of the vector A. aegypti, a mos-
Figure 2. Linear petechial eruptions on the right arm of a 21-year-old woman who returned from travel in Sri Lanka. The petechial eruptions appeared immediately after the blood pressure cuff was deflated.

quito that feeds during the day (unlike the Anopheles mosquito, the malaria vector, which feeds at night). Presently, no specific treatment or vaccine exists for dengue fever.

Our patient improved clinically and was discharged home after 48 h. The results of blood smears, blood and urine cultures, and serological tests for other pathogens (including Leptospira species) were negative.

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References

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