

Case Report: Spontaneous Rupture of the Spleen Due to Dengue Fever

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Spontaneous rupture of the spleen has been described in cases of hematologic, neoplastic and infectious diseases, or resulting from pancreatitis. We report a rare case of spontaneous splenic rupture, and favorable evolution after splenectomy, in a patient with dengue fever, which occurred during the last outbreak of dengue fever in Brazil.

Key Words: Spleen, rupture, dengue fever.

Dengue fever has become a public health concern in Brazil since 1976, when *Aedes aegypti*, the arthropod vector of the causative virus, was again found in the country. The first epidemic was registered in Roraima, a state in the Amazon, in 1981 and 1982. Rio de Janeiro, which has the second largest Brazilian urban area, suffered its first outbreak in 1986 [1]. A patient infected by a second serotype may present dengue hemorrhagic fever, which can be lethal. Last summer there was a huge outbreak in Rio de Janeiro, with hundreds of patients presenting the hemorrhagic form and about 40 confirmed deaths. We report a case of dengue fever with splenic rupture, which occurred during the last dengue fever outbreak in Brazil.

Case Report

A 52-year-old married woman, living in Recife, the capital of Pernambuco, a state in north east Brazil, sought the emergency room in February, 2002, due to a two-day feverish acute illness, generalized myalgias and headache. She had been using NPH insulin for diabetes mellitus during 15 years, ramipril for

hypertension, and cloxazolan for anxiety. There were no abdominal trauma antecedents, nor did she use acetyl salicylic acid. She had smoked two packets of cigarettes/day, for 32 years. The patient received a diagnosis of dengue fever. Paracetamol was prescribed and the patient was discharged. On the sixth day of illness, she developed sudden, severe abdominal pain. She had pallid skin and mucosa, filiform pulses, low arterial blood pressure, globus abdomen with tenderness, defense and mild rebound. Laboratory tests demonstrated lowered hematocrit, hemoglobin and platelets, with normal amylase (Table 1). A CT scan of the abdomen revealed diffuse ascites and a large splenic hemorrhage (Figure 1). An exploratory laparotomy revealed massive hemoperitoneum and splenic rupture, with perisplenic hemorrhage. Splenectomy was performed. Anatomic-pathological examination showed a normal spleen, with no evidence of malignancy or granulomas or splenic capsule rupture. Dengue fever serology (ELISA, with IgM search) was positive. After surgery the patient's recovery was complete.

Discussion

The clinical spectrum of dengue fever ranges from asymptomatic infection, through severe illness (dengue hemorrhagic fever/dengue shock syndrome -DHF/DSS), the characteristic feature of which is increased capillary permeability, resulting in shock [2]. The pathogenesis of DHF is not well understood. Bleeding

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Figure 1. CT scan of the Abdomen shows diffuse ascites and a large splenic hemorrhage.

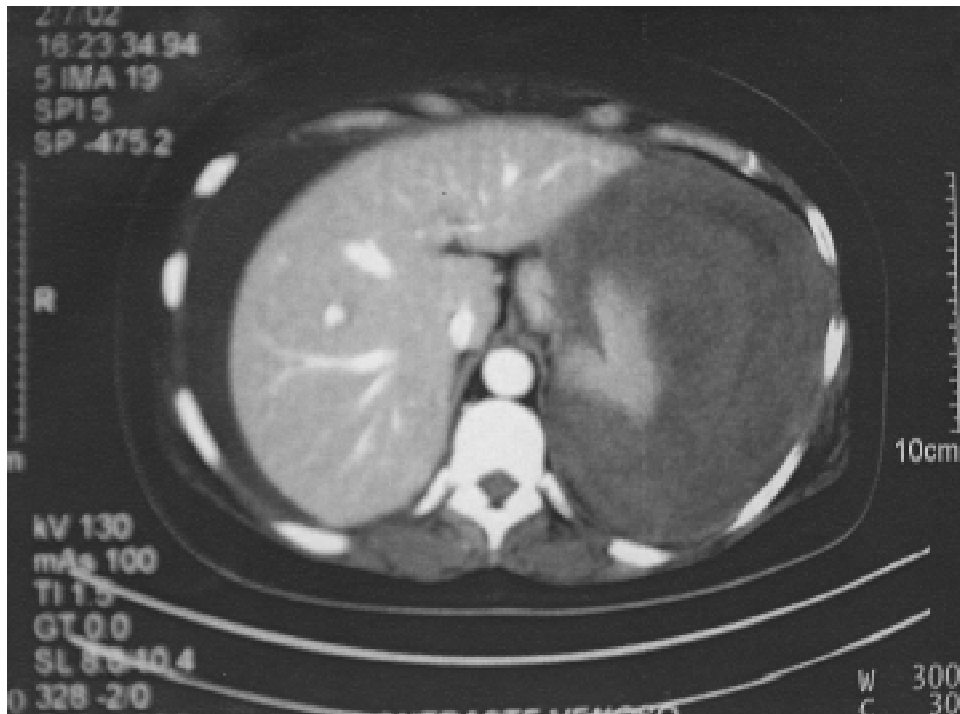


Figure 2. Normal spleen with no evidence of malignancy or granulomas (Hematoxylin and Eosin, x 200).

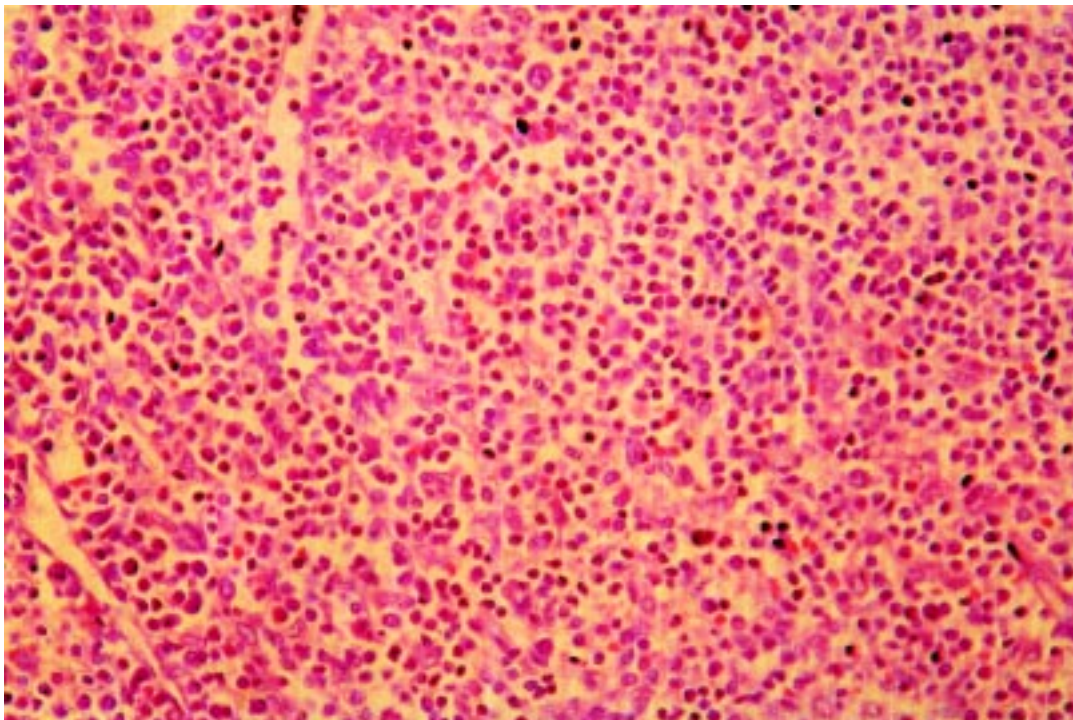


Table 1. Hematologic laboratory and blood chemical values of the Dengue fever patient

Variable	2 nd day	6 th day
Hematocrit (%)	40.6	25.1
Mean corpuscular volume (μm^3)	93	93.3
White-cell count (per mm^3)	3,000	10,200
Band forms	1%	1%
Neutrophils	68%	41%
Lymphocytes	18%	52%
monocytes	13%	6%
Platelet count (per mm^3)	126,000	67,000
Glucose (mg/100ml)	401	220
NaCl (mEq/liter)	127	127
KCl (mEq/liter)	4.4	4.3
Alanine aminotransferase (μ /liter)	-	126
Aspartate aminotransferase (μg /liter)	-	228
γ Glutamyl transferase (U/liter)	-	553 (normal 1-32)
Amylase (U/liter)	-	normal
Bilirubin	normal	normal

can occur in any organ. The spleen, which is frequently congestive, bears subcapsular hematomas in 15% of cases [3]. Although up to 100 million cases of dengue fever are registered per year, there are only two previously reported cases of spleen rupture in patients with dengue fever: a 35-year-old white man with dengue fever was submitted to splenectomy in French Polynesia and had favorable clinical evolution [4]; a 23-year-old female who lived in Venezuela had severe illness and died after splenectomy, with Gram-negative sepsis and multiorgan failure. In the former and in the present case, spleen rupture developed in patients without the classical symptoms of DHF/DSS [5]. Most of the world population lives in areas infested with the dengue vector [2] and the number of sick people may be very high during outbreaks of dengue fever. A case of spleen rupture may be misdiagnosed due to misinterpretation of the shock syndrome as in a case of DHF/DSS. In spite of being a rare condition, dengue fever with spontaneous splenic rupture can be a fatal complication if not quickly and correctly diagnosed. Splenectomy can be curative.

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