Dual Infection by Dengue Virus and *Shigella sonnei* in Patient Returning from India

To the Editor: Two days after returning from a 4-week trip in India, a 44-year-old woman was admitted to a local French hospital with diarrhea and a fever (40°C). The fever had started 2 days before her return and was associated with myalgia and backache. The patient had not been vaccinated against yellow fever and did not take malaria prophylaxis during her trip. Blood smears were negative for malaria parasites. Biological analyses (complete blood count, liver enzymes, urine culture, stool culture, blood cultures) were ordered. She was sent home with an empirical treatment with ofloxacin (200 mg per day). Biological parameters were within the normal range, except for her platelet count, which was at the lower limit (170 G/L). Microbiologic analyses of stools yielded an isolate of *Shigella sonnei* serotype 9.

One week later, the patient was admitted to the infectious diseases unit of a university hospital in Marseilles, France, with persistent fever, myalgia, and a 7-kg weight loss; she had no digestive manifestations. Results of viral serology tests were negative, except that immunoglobulin (Ig)M, but not IgG, specific for dengue virus (formal name: *Dengue virus*; [DENV]) was present. This result was obtained with the Dengue Virus IgM and IgG Rapid Immunochromatographic Card Test (Biotrin, PanBio Pty. Ltd., Brisbane, Australia) and was confirmed by the Dengue Duo IgM-capture and IgG-capture enzyme-linked immunosorbent assay (ELISA) (PanBio) and a previously described in-house IgM antibody capture ELISA tests (1). Forty days later, a second serum specimen was collected and tested positive for DENV IgG with the persistence of IgM by three techniques. In light of these results, the diagnosis of primary dengue infection was established, according to criteria of the Centers for Disease Control and Prevention (2). A literature review did not find any documented case of coinfection by DENV and *Shigella*.

In India, DENV causes epidemic and sporadic cases year-round, with a peak in frequency from August to November, during the humid season (3). During the patient's trip, she successively visited Mumbai (Bombay); went north to the Shimla district, Himachal Pradesh, the Agra district, and Uttar Pradesh; and came back to Bombay 3 days before leaving for France. If one assumes a 3- to 6-day incubation period, she likely acquired the dengue infection in Uttar Pradesh; the virus has been reported to circulate in this area (4).

Although severe forms are increasingly reported, most cases of dengue fever consist of a mild illness with nonspecific symptoms such as headache, myalgia, and malaise. Dengue fever may go underdiagnosed in travelers returning from DENV-endemic areas. This case underlines the importance of a thorough interview and clinical examination to detect characteristic signs (photophobia, painful ocular mobilization, skin rash) in patients returning from areas endemic for dengue fever, when clinical and biological signs incompletely correlate with the primary diagnosis. Since dengue fever is the second most frequent cause of febrile illness in persons returning from tropical areas, such patients should be routinely screened for the disease.

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St. Louis Encephalitis in Argentina: The First Case Reported in the Last Seventeen Years

To the Editor: St. Louis encephalitis is a mosquito-borne viral disease that affects humans. The causative agent, SLEV (formal name: *Saint Louis encephalitis virus*), is a member of the *Flaviviridae* family. Severity of the clinical syndromes increases with age, and persons >60 years old have the highest frequency of encephalitis. The primary transmission cycle involves wild passeriform and columbiform birds, and *Culex* sp. mosquitoes (1). In Argentina, an urban cycle may involve *Cx. quinquefasciatus*, which is a source of a viral isolate, and abundant birds (house sparrows, doves, or chickens) (2). The distribution of SLEV in Argentina is wide; seroprevalence ranges from 3% to

50% of the country's population (3). Spinsanti et al. reported results of a serologic screening in persons ages 0–87 years who live in the city of Córdoba; antibodies were most frequently found in persons >60 years of age (4). However, cases of St. Louis encephalitis reported in Argentina are very rare. Two cases with serologic diagnosis were reported in 1964 and 1968, respectively (2). In 1971, two more cases were diagnosed on the basis of viral isolation (5). Finally, the last case reported was a patient with meningoencephalitis diagnosed in the province of Buenos Aires by hemagglutination inhibition assay (6). Herein, we report a case of Saint Louis encephalitis that occurred in the province of Córdoba, Argentina.

A 61-year-old man was admitted to the hospital in February 2002, complaining of headache, fever, and diplopia. He had been well until 3 months before admission, when ophthalmic herpes zoster was diagnosed. He underwent therapy with oral acyclovir and had a good clinical outcome. Ten days before admission, he developed unstable gait with misbalance and hand tremors, mainly at his left side. On admission, he had occipital headache, diplopia, and nausea and vomiting associated with high fever and chills. Somnolence appeared a few hours before the consultation.

The patient was a right-handed businessman, a native of Córdoba. He was married and had no risk factors for sexually transmitted diseases. He had not traveled inside or outside the country during the last year. He lived near a river with a high-density population of mosquitoes.

Vital signs on admission showed axillary temperature of 39°C, pulse of 90 beats per minute, respiratory frequency of 20 per minute, and blood pressure of 110/70 mmHg. Physical examination demonstrated a somnolent patient who was easily aroused and oriented. His speech was slurred. Results of a fundoscopic examination appeared normal. Results of a cranial-nerve examination showed horizontal left diplopia with left sixth nerve paresia. A resting, postural, and intentional hand tremor was evident. Motor strength was 5/5 throughout with normal bulk and tone, tendon reflexes, and coordination. Examination of sensitivity showed no abnormalities. A slight neck rigidity was detected.

Routine laboratory analysis was unremarkable, and results of serologic tests for coxsackie virus, echovirus, and HIV were negative. HIV-1 RNA by polymerase chain reaction (PCR) and p24 antigen were also negative. Cerebrospinal fluid study revealed a leukocyte count of 18/mm^3 (80% lymphocytes), a glucose level of 48 mg/dL, and a protein level of 87 mg/dL. Cryptococcal antigen, antibodies for syphilis, Human herpesvirus 1 and 2, and PCR for varicella-zoster virus 1 and Human herpesvirus were also negative. Results of an electroencephalogram and a chest radiograph were normal. Therapy with intravenous acyclovir was initiated. A magnetic resonance imaging (MRI) scan of the brain showed a striking signal change on T2 in the substantia nigra of the midbrain, mainly at the right side.

The patient continued febrile, diplopia disappeared, and meningeal signs progressed with frank cervical stiffness, positive Kerning sign, and photophobia. Diffuse tremulousness and axial rigidity appeared. Upper extremities showed rigidity with cogwheel phenomenon. Conversely, lower extremities showed spasticity with bilateral Babinski sign. Tendon reflexes became enhanced. His gait showed retropulsion with wide base sustentation. Dysdiadochokinesia appeared. On the third day, a new lumbar puncture showed worse results: a leukocyte count of 210/mm^3 (82% lymphocytes), a glucose level of 51 mg/dL, and a protein level of 106 mg/dL. Another electroencephalographic examination showed unspecific centroparietal disorganization with right side predominance. Intravenous acyclovir was stopped. On the 5th day, the patient began to recover; he was discharged on the 10th day. After 3 months of follow-up, only left arm rigidity and a left hand tremor persisted.

Acute- and convalescent-phase serum samples (taken 10 and 16 days after onset of illness, respectively) were sent to the Arbovirus and Arenavirus Disease Laboratory, Instituto de Virología, Córdoba. SLEV immunoglobulin (Ig) M antibodies were positive by indirect immunofluorescence assay (IFA). Seroconversion for IgG antibodies was demonstrated by IFA (7) and hemagglutination inhibition assay, with titers of 640 and 80 in the first sample and 2,560 and 320 in the second sample. These results were confirmed by neutralization test using the reduction of plates technique in Vero cells culture, as described (8). Eastern equine encephalomyelitis virus and Western equine encephalomyelitis viruses with known circulation in Argentina were included in the assay with negative results (3). An increase in antibodies titers between acute- (320) and convalescent-phase (1,280) samples was found only for SLEV. Among other flaviviruses, dengue, yellow fever, and Ilhéus circulate only in subtropical areas of Argentina (the province of Córdoba is not included in this area); only dengue virus was investigated (by neutralization test) because of a current epidemiologic surveillance program; results were negative. No evidence that West Nile virus is currently circulating or has entered Argentina was found, so we did not perform tests to detect it (2,9). Isolation of SLEV from the cerebrospinal fluid and blood was attempted in newborn mice and Vero cell cultures with negative results.

While the typical clinical manifestations of viral encephalitis (fever, headache, and altered level of consciousness) are indistinguishable from each other, tremor and other extrapyramidal signs are described in St. Louis encephalitis and Japanese encephalitis (10). The typical MRI finding of patients with St. Louis encephalitis is localized in the substantia nigra (11).

In summary, the occurrence of St. Louis encephalitis in a 61-year-old patient, after >10 years of no reports in Argentina, along with specific epidemiology, suggest that further studies are needed to assess the risk for human infection by SLEV in Argentina and the role of several mosquito species in its transmission.

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Streptomyces bikiniensis Bacteremia

To the Editor: Carey et al. recently reported in this journal a case of catheter-related bacteremia attributed to *Streptomyces* in a patient receiving holistic infusions (1). We describe the isolation of *Streptomyces bikiniensis* from multiple blood cultures in a single patient over the course of 1 week, further illustrating that *Streptomyces* is pathogenic and a cause of bacteremia even in the absence of overt clinical symptoms and risk factors.

A 14-year-old girl with osteosarcoma of the right proximal tibia came to our hospital 13 months after diagnosis for her final course of chemotherapy. At the time of diagnosis, a double-lumen central venous catheter was inserted. Her course was complicated by poor response to chemotherapy, and a limb salvage procedure was performed 3 months after diagnosis. The proximal tibia was replaced with a cadaveric bone graft. Several hours after the patient received methotrexate, a fever of 39.2°C developed. No sign of infection was observed on physical examination. Her leukocyte count was 6,300 cells/mm^3 with an absolute neutrophil count of 4,914 cells/mm^3. She received a single dose of acetaminophen and was without fever for the remainder of her hospitalization. A blood culture obtained from the central venous catheter at the time of fever grew *Streptomyces*. Repeat blood cultures obtained from both ports of the central venous catheter on day 3 and a peripheral blood culture obtained on day 4 also grew *Streptomyces*. Treatment with vancomycin and cotrimoxazole was started on day 4 in the hospital. The *Streptomyces* isolate was susceptible to vancomycin, amikacin, cotrimoxazole, erythromycin, cephazolin, and tetracycline and was resistant to ampicillin, penicillin, oxacillin, and clindamycin. A blood culture drawn from the central venous catheter on day 3 of antibiotic therapy (the 6th day in the hospital) grew *Streptomyces* after 9 days of incubation. All subsequent blood cultures were without growth. The central venous catheter was removed, and the patient received vancomycin intravenously for 6 weeks, without recurrence of *Streptomyces* bacteremia.

The bone graft was considered a potential source of infection. As most cases of disease from *Streptomyces* occur in the tropics, we requested information on whether the donor traveled or resided outside the United States. However, the donor had no history of travel outside the United States. All cultures taken from the donor and the graft were without growth (although this did not exclude the graft as the source of infection),