Short Report: Description of the First Reported Human Case of Spotted Fever Group Rickettsiosis in Urban Bangkok

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Abstract. Described herein is the clinical presentation of a patient from Bangkok, with fever, petechial rash, history of a tick bite, and a diagnosis of spotted fever rickettsiosis.

REPORT

Tick-transmitted spotted fever group (SFG) rickettsioses are endemic throughout the world although the prevalence varies from region to region. The predominant clinical manifestations of SFG rickettsioses include fever, headache, and rash. Tetracycline therapy is considered effective and is often associated with a rapid improvement in the patient’s restoration to health.

In Thailand, the first detection of a SFG rickettsia occurred in 1962. The rickettsia was isolated from a mixed pool of larval ticks of *Ixodes* sp. and *Rhipicephalus* sp. collected from *Rattus rattus* trapped in Chiangmai Province.1 This particular isolate is referred to as TT-118 and recently was genetically determined to be a strain of *Rickettsia honei*, the etiologic agent of Flinders Island spotted fever.2 Since this first detection of a SFG rickettsia, 11 SFG rickettsiosis cases have been reported in rural northeastern Thailand, including 3 cases from Chiangmai Province, and 8 cases from the Thai-Myanmar border. Analysis of their serum samples revealed antibody reaction against SFG rickettsial antigens including those derived from TT-118.3,4

We report here the case of a 36-year-old Thai male freelance photographer who lived in his apartment in a suburb of Bangkok, Thailand about 20 kilometers from his office in downtown Bangkok. He had dogs as pets but none for 6 months prior to this event. At his office there were commonly several stray dogs around. Due to the patient’s experience with pet and stray dogs, he was cognizant of the presence of ticks in his surroundings. Eleven days before admission to the hospital, this patient stayed overnight in his downtown office. The next morning while taking a bath, he noticed a tick on his left shoulder that he had not noticed during his bath the night before. He recognized the tick to be similar to those previously found on his dogs. Four days later, he became ill with a high fever.

The patient was subsequently admitted to a nearby hospital on December 21, 2002, with fever (39°C); myalgia; conjunctival vascular congestion; petechial rash on his neck, trunk, arms, and legs; weakness; intense pain and multi-vesicular eruption on his left shoulder; and generalized pitting edema (2+). No eschar was noted. Hematological analyses of the patient’s blood sample revealed: a hematocrit of 38%, a white blood cell count of 4,700 /μL, and a platelet count of 79,000 /μL. Blood chemistry analyses demonstrated: total protein 4.5 g/dL; albumin 2.4 g/dL; globulin 2.1 g/dL; BUN 9 mg/dL; creatinine 1.2 mg/dL; SGOT 200 U/L; SGPT 246 U/L; and alkaline phosphatase 356 U/L. A urine examination showed: 2+ albumin; 1–2 WBC /HPF; 2–3 RBC /HPF; and no casts detected. Chest radiograph examination revealed some infiltration in both lung fields, which suggested the presence of pneumonia.

The initial diagnosis was pyrexia of unknown origin and herpes zoster. No antibiotic treatment was provided although the antiviral agent acyclovir was administered. Two days after admittance, pain at the left shoulder subsided and the patient insisted on leaving the hospital even though he still had a high fever and his other symptoms had not improved. He stayed at home for only 1 day then returned to the hospital.

Upon his second admission, the patient’s temperature was again measured at 39°C. A blood sample was collected and subjected to serological tests for rickettsial diseases, leptospirosis, and typhoid fever. The results were negative for leptospirosis and typhoid fever. However, a SFG rickettsia-specific indirect immunofluorescent antibody test (IFA) demonstrated the presence of both IgM and IgG antibodies reactive against TT-118 (*R. honei*) at a titer of 1:12,800 or greater. The serum sample did not show evidence of antibodies reactive to *Orientia tsutsugamushi* (scrub typhus) or *Rickettsia typhi* (murine typhus) antigens. A diagnosis of SFG rickettsiosis was made and a course of 200 mg doxycycline daily was given orally for 10 days. The patient’s fever subsided within 48 hours of the first dose of doxycycline. The patient fully recovered after 7 days of treatment. Identification *R. honei* TT-118 as the etiologic agent of this SFG rickettsiosis was subsequently confirmed by evaluation of the serum sample by real-time PCR and multilocus sequence typing as previously reported.5

Because the patient lived continuously in and did not leave Bangkok for at least 2 months prior to the onset of this event we believe this represents the first reported case of SFG rickettsiosis contracted in urban Bangkok. We report here the clinical presentation of this case and recommend health care providers be aware of spotted fever rickettsiosis among individuals living or visiting rural and urban settings in Thailand.
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