Scrub typhus in a Chinese girl

To the Editor—Scrub typhus is an acute infectious disease transmitted to humans by chiggers. The disease is restricted almost exclusively to a triangular area formed by Japan, Pakistan, and the Solomon Islands.[1] Since 1984, three cases of scrub typhus in children have been notified to the Hong Kong Department of Health with two of them being Caucasian (personal communication). We report here the fourth case, which presented with pyrexia of unknown origin and several interesting features.

A seven-year-old Chinese girl was admitted with a history of fever of one week's duration together with headache, nausea, malaise, and anorexia. There was no history of travel outside of Hong Kong in the preceding two weeks, nor was there any history of insect bite or any unusual skin lesion. Following admission, the main clinical features were remittent high fever up to 40.5°C not touching baseline, profound malaise, pallor, cervical and perihilar lymphadenopathy, a few pigmented macules over the sternum and mild hepatosplenomegaly. No eschar was identified.

Laboratory investigations revealed the following: a haemoglobin level of 8.8 g/dL with normochromic and normocytic red blood cells, a normal white blood cell count with normal differential, and an ESR of 37 mm/hr. A lumbar puncture was done on admission and yielded a normal cell count and normal biochemistry. The mantoux test was negative. Serology studies revealed a Widal test 'O' titre at 100, 'H' titre at 200, Weil-Felix test of OXK at 640, OX2, OX19 both at 20 and a negative *Brucella* titre. Viral titres were negative with no significant increase over four weeks. Urine, stool, blood and cerebrospinal fluid cultures were all negative for bacteria and viruses.

The patient was initially treated with intravenous ampicillin, given a provisional diagnosis of typhoid fever. The medication was changed to ceftriaxone five days after admission because of the positive Widal test and the clinical picture of persistent fever and malaise; resistant *Salmonella* spp. were considered a possibility. Unfortunately, the patient remained febrile and lethargic. After the Weil-Felix result was known and the diagnosis of scrub typhus was made, doxycycline 200 mg was given for one day, 12 days post-admission.[2] Unfortunately, the single-dose treatment was not effective—she had persistent fever and malaise on stopping doxycycline and ended up receiving tetracycline for 12 days. Her fever declined from 39°C to 38°C after 4 days and complete defervescence occurred after 9 days. A subsequent OXK titre decreased to 160, four weeks later.

Typhus is an important differential diagnosis in pyrexia of unknown origin in Hong Kong because it is readily treatable. The absence of eschar and mite bites is common in Oriental children.[3] Scrub typhus is also commonly confused with typhoid fever.[3] A false-positive Widal test would further mask the true diagnosis if chloramphenicol was used and Weil-Felix test was not performed. A specific serological test for *Rickettsia tsutsugamushi* is now available and should be performed in doubtful cases. Contrary to previous reports, single-dose therapy with doxycycline was not effective in our patient.[2] Further study into the effectiveness of single-dose therapy should be conducted before any general recommendation can be made. Finally, a previously reported case of murine typhus lived in the same district as this patient (Shamshuipo).[4] It would be informative to conduct an epidemiological survey of people in Shamshuipo to ascertian the prevalence of typhus in this district.

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