Fever and rash from Timor: where have you been and when?

Clinical record

A 61-year-old American aid worker was transferred to Royal Darwin Hospital from Timor-Leste with fever and rash. He had worked in Timor for 1 year and was in good health apart from an episode of falciparum malaria treated 9 months previously. He described headache, myalgia and fatigue for 7 days, and 6 days of fever and chills. On Day 2 of illness, he attended a Timorese clinic where an unidentified blood test was reported positive for falciparum malaria. Despite initial treatment with sulfadoxine–pyrimethamine and 3 days of atovaquone–proguanil, his fever and chills persisted. After a further positive test result for falciparum malaria at a laboratory after his arrival in Bali en route to Timor, after a 4-week holiday on his orchard in Seminole County, Florida, United States. On specifi

Enriched text:

Ehrlichia chaffeensis, an obligate intracellular pathogen in the Anaplasmataceae family, is a tick-borne pathogen found predominantly in the southern and eastern states of the US. It is not endemic in Australia or Timor-Leste, and ehrlichiosis has not previously been reported in Australia (although Anaplasma platys has been found in Australian dogs). After propagation in monocytes, it causes fever, headache, myalgia, thrombocytopenia and leukopenia, with rash occurring in about 30% of cases. Complications include shock, meningoencephalitis, coagulopathy, acute kidney injury and cardiac failure. Reported mortality is about 3%, with fatal outcome linked to age and delayed diagnosis and treatment. Human monocytic ehrlichiosis shares many clinical features with the other US tick-borne rickettsial and rickettsia-like diseases, RMSF and anaplasmosis, with rash more common in RMSF but rare in anaplasmosis. While these may be

Confluent, macular, erythematous, blanching rash on the patient’s trunk.
difficult to differentiate,\textsuperscript{2-4} all respond well to doxycycline but not to \( \beta \)-lactam antibiotics.\textsuperscript{2}

This case illustrates the importance of obtaining a complete travel and exposure history when assessing febrile travellers, and not just their most recent travel. A reliance on the most recent area of residence and failure to obtain a history of US tick bites led to initial misdiagnoses of malaria and dengue fever, and delayed the initiation of treatment with potentially life-saving doxycycline. The initial unidentified positive malaria diagnoses in an unaccredited Timorese clinic laboratory were not reproducible and were thought to have been false-positives. False-positive microscopy and overdiagnosis of malaria is common in malaria-endemic areas.\textsuperscript{5} The timing of symptom onset, acute kidney injury and left shift and toxic granulation on blood films\textsuperscript{4} were not suggestive of dengue fever (nor the rash or left shift for malaria), and all provided further clues to the correct diagnosis.

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