

A soldier with a fever and a rash

Diagnosis: This patient had scrub typhus.

Investigations: Enzyme-linked immunosorbent assay (ELISA) is now commonly used as a screening test, and the immunofluorescent test is a gold standard. Early treatment may modify the response in these tests. The Weil–Felix test is also used, but lacks both specificity and sensitivity (66%–80%).^{1,2}

Treatment: Doxycycline 100mg is given twice daily for 3–7 days. Treatment shortens the illness and nearly eliminates mortality, which can be as high as 30% if untreated. Drug refractory strains have been reported.¹ Ciprofloxacin and azithromycin appear to be effective in vitro.²

Prevention: Doxycycline 200mg weekly can be useful for chemoprophylaxis. Personal protective measures can also be useful.²

Epidemiology: Scrub typhus (*Orientia tsutsugamushi*) is a zoonotic disease caused by an obligate intracellular bacteria (rickettsia). Humans are accidental hosts;³ rats are the normal animal hosts. The vector is the larval stage (chiggers) of Trombiculid mites (*Leptotrombidium deliense*). The limited range of the host animals and the chiggers means that the areas of transmission are highly focal. The incubation period is normally 10–12 days (range, 6–18 days). Scrub typhus is an acute febrile illness that can be mild to fatal, depending on the *Orientia* strain and treatment intervention.² It usually presents with maculopapular rash, eschar (although it may not be present), a dramatic response to tetracycline, headache, lymphadenopathy, conjunctival suffusion, and frequently central nervous system involvement.^{1,2} Eschars tend to be located around areas where the clothing becomes tighter, often around lower limbs and belt lines. It is important to ask the patient

about possible lesions and look for eschars. The usual clinical course ranges from 10 to 28 days, but there can be a protracted convalescence period of up to 4 months.² Complications include heart failure and pneumonia.

Geographical distribution: It is estimated that worldwide there are about one million cases of scrub typhus annually, with an estimated one billion people at risk.³ There have been a few epidemics among military personnel at the Cowley Beach Training Area,^{4,5} most recently in 2005. “Hot spots” appear to be Innisfail to Mission Beach, Yarrabah and Mossman in North Queensland. A new focus was also reported in the Torres Strait at Darnley Island.⁶ It has also been found in Litchfield National Park in the Northern Territory⁷ and the Kimberley region of Western Australia.⁸ It is one of the most prevalent infectious diseases of rural eastern and southern Asia.¹

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References

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