

d Tick bite fever

A 36-year-old teacher from Kroonstad, northern Free State Province, developed fever, myalgia, headache, abdominal pain two weeks after camping in a rural area, east of Kroonstad. On day 5 of illness he consulted a medical practitioner, was prescribed antibiotics, did not improve and was hospitalized on 9th of February 2017. On admission, he had a leucopenia (white cell count of $3.26 \times 10^9/l$), worsening thrombocytopenia (from $132 \times 10^9/l$ to $100 \times 10^9/l$) and marginally raised liver enzyme levels (AST, 79 U/l and ALT 120 U/l). Both Crimean-Congo haemorrhagic fever (CCHF) and tick bite (TBF) fever were considered as possible causes based on the epidemiology and results of the full blood count and liver function tests. Laboratory tests for CCHF were negative by PCR and serology. Acute febrile illness 2 weeks post-camping together with a key finding of an eschar on the patient's leg supported the diagnosis of tick bite fever, despite negative molecular tests on blood and a swab taken from the eschar and negative serology for rickettsial infection taken during the acute phase of the illness. Antibiotics may have affected the molecular test results. Serology testing on convalescent serum is recommended to confirm the diagnosis.

The patient recovered on doxycycline treatment. Tick bite fever is a fairly common bacterial disease transmitted by ticks in South Africa (and elsewhere). *Rickettsia conorii* and *Rickettsia africae* are known causative agents of tick bite fever in South Africa, the latter usually being associated with milder disease. *R. africae* is typically associated with ticks that may be found on cattle and wildlife (such as African 'bont' ticks) and as such more frequently reported from rural settings in the country. *R. conorii* on the other hand can be transmitted by dog ticks and can be found in peri-urban and peri-domestic settings. Given prevailing weather conditions in many parts of South Africa (increased rainfall and warm temperatures), an

increase in tick populations constitute an increased risk of exposure to the disease.

The recommended treatment of tick bite fever is doxycycline, which should be provided on clinical suspicion of the disease. Diagnosis is often made on clinical grounds only, particularly in the presence of an eschar accompanied by acute febrile illness. Serological testing is only useful after the first week of illness. PCR for rickettsiae on an eschar swab is helpful during the acute phase of illness.

Source: Centre for Emerging and Zoonotic Diseases, NICD-NHLS; (januszp@nicd.ac.za)



Figure 2. A course maculopapular rash often associated with tick bite fever. The rash may also be noted on the palms and soles.