A Traveler Returning from South Africa with Rash and Genital Ulceration
(See page 881 for Photo Quiz)

Figure 1. Genital ulceration: tick bite with single eschar

Figure 2. Generalized maculopapular cutaneous rash

Diagnosis: African tick-bite fever caused by \textit{Rickettsia africae.}

The diagnosis was suggested because the patient had returned from an adventure race in South Africa and because we did not find any sexual risk behaviors. A careful cutaneous examination did not find any inoculation eschar except for a genital ulceration (figure 1), which was classified as a tache noire, and a generalized maculopapular cutaneous rash (figure 2). An ELISA immunofluorescence assay to detect antibodies to \textit{Rickettsia} species in serum samples was performed. The acute-phase serum sample contained no detectable antibodies, but the convalescent-phase serum sample was positive for IgG antibody (titer, 1:128) and IgM antibody (titer, 1:16). Serological cross-reactions between \textit{R. africae} and \textit{Rickettsia coronii} were found with equal titers of antibody. The patient received doxycycline, 200 mg/day for 10 days, and became asymptomatic.

Various rickettsial diseases, of which the spotted fever group (represented by Mediterranean spotted fever) and African tick-bite fever are the principal examples, are endemic in sub-Saharan Africa. African tick-bite fever is a disease caused by \textit{R. africae} and transmitted by cattle ticks in rural areas of southern Africa. It was first described by Kelly et al. [1] in a patient who presented with fever, an inoculation eschar, and a regional lymphadenopathy, but no rash. Since then, \textit{R. africae} has been implicated in several outbreaks [2–4] and has been recognized as an emerging health problem for international travelers to rural sub-Saharan Africa [5, 6]. Clinical features include fever, headache, myalgia, and maculopapular cutaneous rash. A lesion—the eschar or tache noire—at the site of the tick bite is a diagnostic criterion and requires a detailed clinical examination, as illustrated in the case we describe. Multiple inoculation eschars are more frequent than single inoculation eschars.
The typical location of eschars is on the legs, but any inoculation site is possible [5]. The inoculation lesion is associated with regional lymphadenopathy in the region proximal to the eschar. The duration of time between the tick bite and the onset of symptoms ranges from 4 to 10 days [3]. The diagnosis is suggested by epidemiological data and clinical features, and is confirmed with serological testing. The usual method, namely microimmunofluorescence assay, which is sometimes completed and other times conducted with cross-adsorption testing and Western immunoblotting if cross-reactions between R. afericae and R. conorii are noted, enabled us to confirm that the antibodies detected are specific to R. afericae. Culture of R. afericae from an eschar biopsy specimen or molecular typing with PCR amplification from eschar biopsy or blood samples is also possible [3]. The drug of choice for treatment is doxycycline at a dosage of 200 mg/day for 7 to 15 days.

References

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