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Letters

Letters commenting on recent articles as well as letters reporting cases, outbreaks, or original research are welcome. Letters commenting on articles should contain no more than 300 words and 5 references; they are more likely to be published if submitted within 4 weeks of the original article's publication. Letters reporting cases, outbreaks, or original research should contain no more than 800 words and 10 references. They may have 1 Figure or Table and should not be divided into sections. All letters should contain material not previously published and include a word count.

Rickettsia aeshlimannii Infection, Algeria

To the Editor: Only 2 cases of *Rickettsia aeshlimannii* infection have been reported. We report 2 additional cases documented in Algeria by immunofluorescence (IF) assays and confirmed by Western blot (WB) assays and cross-adsorption studies.

Tick-borne rickettsioses are now recognized as emerging or reemerging human infections worldwide. These zoonoses, caused by intracellular bacteria within spotted fever group (SFG) *Rickettsia* spp., share characteristic clinical features including fever, rash, and sometimes inoculation eschar at the bite site (1). In North Africa, cases of rickettsioses are rarely documented (2). In Algeria, only Mediterranean spotted fever caused by *R. conorii* has been described (3).

From 2000 through 2006 in Algeria, all patients with suspected rickettsioses seen at the infectious diseases units of Constantine and Batna hospitals were included in a prospective study; clinical and epidemiologic data and acute-and convalescent-phase serum samples obtained 2–4 weeks later were collected. Serum samples were sent to Marseille, France, where they were analyzed by an IF assay, using 9 SFG rickettsial antigens (*R. conorii conorii*, *R. conorii israelensis*, *R. africae*, *R. sibirica mongolitimonae*, *R. aeshlimannii*, *R. massiliae*, *R. helvetica*, *R. slovacica*, and *R. felis*) and a typhus group antigen (*R. typhi*) (3). The IF assay result was considered positive 1) if immunoglobulin (Ig) G titers were ≥ 128 and/or IgM titers were ≥ 64 for *R. conorii* and 2) if IgG titers were ≥ 64 and/or IgM titers were ≥ 32 for other rickettsial antigens (3). When cross-reactions between several antigens were noted, rickettsial antigen was considered to represent the infectious agent if titers of IgG and/or IgM antibody against this antigen were at least 2-fold

higher than titers of IgG and/or IgM antibody against other rickettsial antigens (3,4). When the difference in titers among several antigens was lower than 2-fold, WB assays and cross-adsorption studies were performed (4,5). A total of 135 patients were included in the study. We describe 2 cases of *R. aeshlimannii* infection. Cases caused by other SFG rickettsiae will be reported elsewhere.

An 80-year-old man who reported contact with dogs parasitized by ticks had a 7-day history of high fever, headache, myalgia, and vomiting. On physical examination, a generalized maculopapular rash, 2 eschars (right shoulder and knee), and bilateral hemorrhagic signs on the retina were noticed. Elevated levels of liver enzymes (aspartate aminotransferase 187 U/L, alanine aminotransferase 108 U/L), hyponatremia (sodium 120 mmol/L), and hypokalemia (potassium 2.9 mmol/L) were found. IF assay showed raised levels of IgG/IgM against *R. aeshlimannii* (512/64) and *R. conorii* (128/0).

The second patient, a 36-year-old man, reported a 15-day history of fever with headache and failure of amoxicillin and cotrimoxazole treatments. Oral aphthous, a maculopapular rash, and purpuric lesions on the arms were noticed. IF assay showed raised levels of IgG/IgM at the same titer (2,048/32) against *R. conorii*, *R. aeshlimannii*, and *R. massiliae*. WB assays and cross-adsorption studies confirmed that antibodies were directed against *R. aeshlimannii* (Figure). Both patients recovered after doxycycline treatment (1).

R. aeshlimannii was first characterized as a new SFG rickettsia after its isolation from *Hyalomma marginatum marginatum* ticks in Morocco in 1997 (6). Thereafter, *R. aeshlimannii* has been detected in this tick species in southern Europe and North Africa (7), as well as in *H. m. rufipes* in sub-Saharan Africa (1). Preliminary data have suggested that these *Hyalomma*

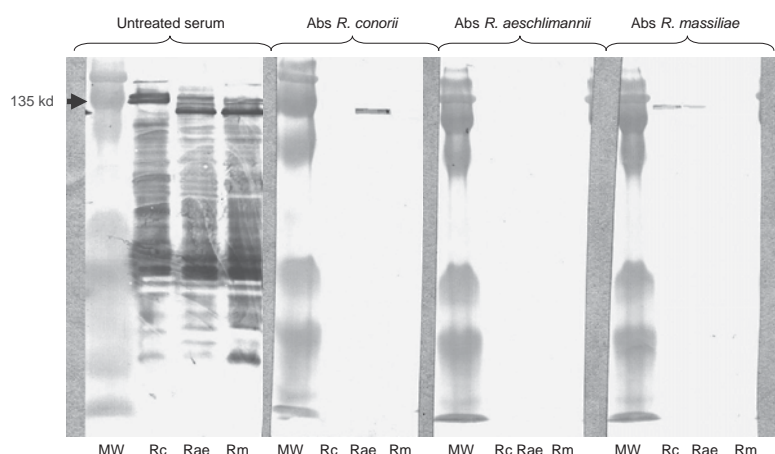


Figure. Western blot assay (WB) and cross-adsorption studies in serum of a patient with rickettsiosis in Algeria. Immunofluorescent assay showed raised levels of immunoglobulin (Ig) G/M at the same titer (2,048/32) against *Rickettsia conorii*, *R. aeschlimannii*, and *R. massiliae*. Lanes Rc, Rae, and Rm: WB assay using *R. conorii*, *R. aeschlimannii*, and *R. massiliae* antigens, respectively. MW, molecular weights are indicated on the left. Untreated serum, late serum samples tested by WB. When adsorption is performed with *R. aeschlimannii* antigens, homologous and heterologous antibodies disappear, but when it is performed with *R. conorii* antigens and *R. massiliae*, homologous antibodies disappear but heterologous antibodies persist. This result indicates that antibodies are specifically directed against *R. aeschlimannii*. Abs, absorbed.

organisms may be not only vectors but also reservoirs of *R. aeschlimannii* and as a consequence, the geographic distribution of *R. aeschlimannii* would be at least that of these ticks throughout southern Europe and Africa (8).

Although WB assays and cross-adsorption studies are time-consuming and only available in specialized reference laboratories, new data can be obtained for a better understanding of rickettsioses. We have added the description of 2 more cases of infection with *R. aeschlimannii*. Only 2 cases of human infection caused by this rickettsia had been previously reported, including infection in a patient returning to France from Morocco, and another in a patient in South Africa (9,10).

Clinicians should be aware that several tick-borne rickettsial pathogens are present in Algeria. Specific clinical features may be directly influenced by the *Rickettsia* spp. involved, the rickettsial infection rate of the vector, and tick behavior. *H. marginatum* ticks readily bite humans, and persons may receive multiple simultaneous tick bites. Furthermore, the high infectious

rate of these ticks by *R. aeschlimannii* has been reported (1). Therefore, the probability of being bitten by several infected *H. marginatum* ticks is high and can lead to several eschars in patients, a characteristic of few tick-borne rickettsioses. Finally, although doxycycline is the reference treatment for rickettsioses, rifampin has been used (1). However, although *R. conorii* is susceptible in vitro to this drug, *R. aeschlimannii* is resistant. Because patients suspected of having rickettsiosis must receive prompt presumptive treatment, the presence of *R. aeschlimannii* in Morocco reinforces the need to use doxycycline as a first-line drug.

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