

Borrelia miyamotoi disease can be added to list of traveler's concerns

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<http://danielcameronmd.com/borrelia-miyamotoi-disease-added-to-list-of-travel-medicine-concerns/>

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[Doctors described a case of BMD](#) in a previously healthy 63-year-old American man living in Japan. “He reported being bitten by ticks several times while staying with his family at his summer house in the state of Minnesota in the USA from July 25 to August 9, 2013,” according to Oda from the Division of Infectious Diseases, Musashino Red Cross Hospital, Japan. [1]

He presented with a 10-day history of malaise, headache, myalgia, and arthralgia following his return from Minnesota. He presented with a high fever (39.2 C), relative bradycardia (77 beats/min), erythema migrans, slightly elevated aspartate aminotransferase and alanine aminotransferase levels (39 IU/L and 77 IU/L, respectively), and elevated C-reactive protein level (7.73 mg/dL).

The man was diagnosed with BMD by seroreactivity to recombinant glycerophosphodiester phosphodiesterase (rGlpQ). rGlpQ was described in a case series by Molloy from IMUGEN in the *Annals of Internal Medicine*. [2] “The accuracy of rGlpQ serodiagnosis was originally designated by Schwan et al. [3], and is an alternative method when bacterial DNA is not detected,” according to Oda.

He was also diagnosed with Lyme disease based on the rash and three IgM bands: 24 kDa (OspC), 39 kDa (BmpA), and 41 kDa (Fla). The authors did not mention whether they looked for other tick-borne illnesses reported in Minnesota such as Babesia, Ehrlichia and Anaplasmosis.

“This case suggests that BMD should be considered in febrile travelers returning from the Northeastern and Midwestern regions of the United States,” states Oda “and that BMD and Lyme disease co-infection should be considered to detect cases of imported BMD.”

The authors summarize the literature on treatment of BMD. “Treatment for uncomplicated BMD is generally doxycycline (100 mg twice a day) for 7- 14 days,” explains Oda. “Amoxicillin, cefuroxime, and macrolide also may be effective.” [4] Oda also included a case of BMD with meningoencephalitis in an immunocompromised patient who failed 2 weeks of doxycycline that responded to 30 days of intravenous penicillin G therapy. [5]

The 63-year-old American traveler to Minnesota gradually improved over 14 days on doxycycline. The authors’ case report adds BMD disease to the growing list of traveler's concerns following a tick bite.

References:

1. Oda R, Kutsuna S, Sekikawa Y, Hongo I, Sato K, Ohnishi M, Kawabata H: The first case of imported *Borrelia miyamotoi* disease concurrent with Lyme disease. *J Infect Chemother* 2017.
2. Molloy PJ, Telford Iii SR, Chowdri HR, Lepore TJ, Gugliotta JL, Weeks KE, Hewins ME, Goethert HK, Berardi VP: *Borrelia miyamotoi* Disease in the Northeastern United States: A Case Series. *Ann Intern Med* 2015.
3. Schwan TG, Schrumphf ME, Hinnebusch BJ, Anderson DE, Jr., Konkel ME: GlpQ: an antigen for serological discrimination between relapsing fever and Lyme borreliosis. *J Clin Microbiol* 1996, 34(10):2483-2492.
4. Krause PJ, Fish D, Narasimhan S, Barbour AG: *Borrelia miyamotoi* infection in nature and in humans. *Clin Microbiol Infect* 2015.
5. Gugliotta JL, Goethert HK, Berardi VP, Telford SR, 3rd: Meningoencephalitis from *Borrelia miyamotoi* in an immunocompromised patient. *N Engl J Med* 2013, 368(3):240-245.

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