

Single tick bite leads to 3 diseases in elderly woman

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The woman was an avid gardener who had a history of COPD (chronic obstructive pulmonary disease) and high blood pressure. She was admitted to the hospital with dyspnea, fatigue, and a cough productive of yellowish mucoid sputum.

The patient also had significant altered mental status, pallor, and peripheral edema. A lung examination revealed bibasilar crackles, [Kumar explains](#).¹

She was treated empirically for community-acquired pneumonia and was prescribed ceftriaxone and azithromycin.

The woman had no history of a rash or tick bite. However, lab tests later revealed the presence of 3 tick-borne pathogens.

“We present a case of triple infection with babesiosis, Lyme disease, and anaplasmosis treated with antibiotics and red blood cell (RBC) exchange (erythrocytapheresis).”¹

1) Babesia ? This tick-borne disease is caused by a tiny parasite that infects the red blood cells.

“A peripheral blood smear revealed the presence of intracytoplasmic parasites consistent with Babesia,” writes Kumar. Consequently, the woman was started on azithromycin and atovaquone.

Further testing revealed that she had severe babesiosis. Her parasitic load was so high (9.04%) that she required a red blood cell (RBC) exchange (erythrocytapheresis).

Repeat testing, however, found the parasitic load remained high (6.54%), which required a second round of RBC exchange.

“Antimicrobials were changed to clindamycin, quinine, and doxycycline for a total of 14 days,” writes Kumar.

2) Borrelia burgdorferi ? The bacteria that causes Lyme disease. Serologic tests were positive. The patient was prescribed doxycycline.

3) Anaplasma ? The bacteria that causes anaplasmosis, formerly known as human granulocytic ehrlichiosis (HGE). The patient's anaplasma titers were positive.

“Patients presenting with an atypical clinical picture of a single pathogen or a lack of improvement with antibiotics after 48 hours require further testing for the presence of other infections,” the authors suggest. “A delay in the diagnosis can lead to an increased risk of complications and disease

duration.”

In another case report, Grant and colleagues describe a 70-year-old man who presented to the emergency room with "fevers, ankle edema and nausea following a presumed insect bite on his ankle 1 month prior."²

Test results revealed the man was positive for Lyme disease, Babesia microti, and Anaplasmosis.

His symptoms resolved completely following treatment with doxycycline, atovaquone and azithromycin.

The authors suggest, "Co-infection with Lyme disease and another tick-borne illness is common, and testing for co-infection should be performed in patients with >24 hours of symptoms despite appropriate treatment, as well as unexplained laboratory abnormalities."

Related Articles:

[One bite, six diseases: all from the same tick](#)

[First-line combination therapy for tick-borne illnesses](#)

[Video: Co-infections of Lyme disease](#)

References:

1. Kumar M, Sharma A, Grover P. Triple Tick Attack. Cureus. 2019;11(2):e4064.
2. Grant L, Mohamedy I, Loertscher L. BMJ Case Rep 2021;14:e241004. doi:10.1136/bcr-2020-241004

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