

Delayed onset of Babesia highlights importance of follow-up visits

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Doctors diagnosed and treated a 67-year-old woman for early Lyme disease with a 21-day course of amoxicillin after she presented with an erythema migrans rash. (The woman was allergic to doxycycline.)

Near the end of her treatment, the woman developed fevers (102.92°F), myalgias, dizziness, and fatigue. Due to concerns that she may be septic or have an ongoing tick-borne infection, the woman was admitted to the local hospital.

Clinicians were particularly worried about *anaplasmosis* and *babesiosis*, given the patient's thrombocytopenia and low neutrophil count.

“When patients present with a tick bite or suspected tick-borne infection, it is important to recognize that a single tick can serve as a common vector for multiple infections.”

The woman's haemoglobin and platelets continued to drop, and she was transferred to Mayo Clinic in Rochester, MN. Laboratory tests revealed pancytopenia, a deficiency in red cells, white cells, and platelets.

[Watch video: Tick-borne co-infections](#)

PCR testing was positive for *Babesia* and a *Babesia* parasite load of 0.4% by thick smear, [writes Hoversten from the Mayo Clinic](#). [1]

The patient underwent PCR testing for *Anaplasma*, *Borrelia burgdorferi* and *Ehrlichia*. All were negative. But DNA PCR was positive for *Babesia microti*.

After receiving a 10-day course of azithromycin and atovaquone, the woman's symptoms resolved except for some lingering fatigue.

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The authors could not explain why there was a delay in diagnosis. “However, it is possible that patients have mild parasite load during their initial evaluation, not severe enough to cause systemic symptoms to warrant further evaluation.”

Hoversten suggests “that concurrent *babesiosis* infection be considered in patients with Lyme disease who remain febrile after 48 hours of appropriate antimicrobial therapy or those with unexplained anaemia and/or thrombocytopenia.”

Differential diagnosis

Hoversten points out, “the patient’s abnormalities in CBC are not typical of *Borrelia* infections; therefore, a co-infection was of greater concern than recrudescent Lyme disease.”

Ehrlichia is transmitted by a different type of tick and is not commonly seen in the Midwestern USA. (The patient lived in Wisconsin.)

Cases of *Babesia* have increased in the western Wisconsin region over the past few years.

Viral infections, HIV, Hepatitis C, malaria and drug-induced cytopenias were also considered as a possible cause.

Other cases in the literature

The authors point out that a delayed diagnosis of *Babesia*, along with concurrent infections of *Babesia* and Lyme disease have all been reported in the literature.

“A delay in babesiosis diagnosis was also suggested by Krause et al; however, duration of delay was not reported,” writes Hoversten.

“Case reports by Marcus et al. [2] and Surgers et al [3], both describe patients presenting with an erythematous rash 3 - 4 weeks prior to a worsening of symptoms leading to the diagnosis of babesiosis, similar to our patient.”

Delayed onset *Babesia* in two newborns

A delayed *Babesia* diagnosis is not limited to adults. One study describes 2 newborn infants who were diagnosed with *Babesia* several weeks after the [mother was treated for Lyme disease](#).

Infant 1:

The first infant, a 4 1/2-week-old male, presented with a fever of 101.7, sleepiness and periodic irritability. His mother had been diagnosed with Lyme disease during her third trimester at 32 weeks gestation. She exhibited an erythema migrans (EM) rash and was treated successfully with amoxicillin. [4] Testing of the infant included a blood smear which revealed 2% parasitemia for *Babesia*.

Infant 2:

The second infant presented with symptomatic anemia including malaise, tachycardia, and pallor. The mother had been diagnosed with Lyme disease during her third trimester at 37 weeks gestation. The infant was born at 38 weeks and had no perinatal complications.

The 18-day-old female infant was initially asymptomatic despite a positive *Babesia microti* PCR assay. But, 1 week later she developed neutropenia (an abnormally low count of a type of white blood cell) and anemia. [4]

“Because the *Ixodes scapularis* tick can harbour and transmit multiple parasites simultaneously,” the authors explain, “the possibility of co-infection should be considered in any patient not responding to appropriate initial medical therapy.”

References:

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3. Surgers L, Belkadi G, Foucard A, Lalande V, Girard PM, Hennequin C. Babesiosis and Lyme disease co-infection in a female patient returning from the United States. *Med Mal Infect.* 2015;45(11-12):490-492.
4. Saetre K, Godhwani N, Maria M, et al. Congenital Babesiosis After Maternal Infection With *Borrelia burgdorferi* and *Babesia microti*. *J Pediatric Infect Dis Soc.* 2017.

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