Appropriate diagnosis of tickborne infections

As summer is upon us, we enter the peak of tick season. Most reported cases of tickborne disease occur from April to October, and on page 555 of this issue, Eickhoff and Blaylock offer a timely review of less common (non-Lyme disease) but significant tickborne infections.

In areas endemic for infection with *Rickettsia rickettsii*, the organism responsible for Rocky Mountain spotted fever (RMSF), physicians and many patients are keenly aware of the signs and symptoms of the disease and are quick to offer and accept empiric antibiotic (doxycycline) therapy. Empiric therapy at the first suspicion of RMSF is appropriate, as untreated infection carries a 20% death rate. Vigilance for early Lyme disease (caused by *Borrelia burgdorferi*) is also high in true endemic areas, likely because of public awareness and concern for various documented—and some touted but unproven—associated morbidities.

Other tickborne infections are likely underrecognized by physicians who are not experts in infectious disease, and thus are not treated early. There are many reasons for this, including the relative infrequency of severe disease, the nonspecific clinical signs of early infection, and the spreading of infections to geographic areas where they are traditionally not considered endemic.

Additional features likely contribute to delayed diagnosis. Surveys of patients with documented RMSF or Lyme disease show that a large proportion of infections occur in patients who have no history of camping or hiking. Most people are not even aware that they have been harboring a feeding tick, as many ticks are quite small and attachment is painless. Because some ticks survive more than a year, they may stay alive in clothes and closets throughout the winter months and occasionally cause nonseasonal infections.

Geography and entomology matter; the matching of a specific tick vector to a specific disease is tight. With the slow migration of some tick species along with their nonhuman animal hosts into new territories due to temperature changes and urbanization, some diseases are appearing in areas of the country where they had not been previously diagnosed. We must be aware of these changes, and the US Centers for Disease Control and Prevention (CDC) offers useful updated infection maps on their website.

The diagnosis of acute infection is often delayed because of late consideration of the possibility of the disease. In addition, some tests are serologic and require the passage of time before a diagnostic result is obtained. But an increasing and distinct problem is the overdiagnosis and long-term treatment of some patients whose infection is undocumented, perpetuating concern over the unproven entity of chronic infection, the most prevalent being the diagnosis and treatment of "chronic Lyme disease." Close attention must be paid to the manner of diagnosis and the specific tests used to purportedly confirm the diagnosis of infection. This has been an ongoing

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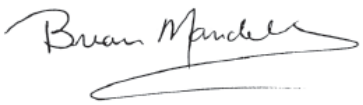
challenge in managing patients with chronic fatigue and malaise, a vexing and significant clinical problem without a ready solution in patients who have undergone an extensive evaluation. It is obviously tempting for patients to grasp at any "diagnostic" answer. But chronic and repeated therapy for nonexistent infection is not benign. The CDC has published lists of tests for Lyme disease in particular that are considered to have inadequately established accuracy and clinical utility; these include lymphocyte transformation tests, quantitative CD57 lymphocyte assays, and urinary antigen "capture assays."

Recognizing and treating acute tickborne infections is crucial, as is distinguishing them from their mimics, which include some systemic autoimmune diseases. But we should not allow the fear of undertreatment of early infection to morph into unwarranted overtreatment of nonexistent chronic infection, just as we should not prematurely assume that ongoing symptoms of fatigue and malaise after a presumed tickborne infection are from the psychologically crippling fear of ongoing morbidity. Periodic reappraisal of the patient and his or her symptoms is warranted.



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