

An Alternative Diagnosis: *Bartonella* Neuroretinitis

Dear Editor,

We refer to the letter 'Lyme Neuroretinitis in Singapore: A Diagnostic Dilemma' published in the April 2012 Vol. 41 No. 4 issue of the Annals, Academy of Medicine. We propose a differential diagnosis of *Bartonella* neuroretinitis for the case reported.

The authors described a 59-year-old Chinese man who had neuroretinitis with a macular star on retinal examination. Syphilis serology was negative. Enzyme-linked immunosorbent assay (ELISA) serology for Lyme disease showed a positive IgG titre. A repeat Lyme serology showed no rising titre and a confirmatory test using western blot was negative. The patient responded to treatment with intravenous ceftriaxone followed by oral amoxicillin. A weaning dose of oral steroid was also given for anti-inflammatory effect. Direct questioning of the patient revealed positive contact history with his dog that had a previous history of ticks. No significant travel history outside of Singapore was mentioned.

Discussion

The unique finding of a macular star on the retinal examination should prompt physicians to investigate for infective causes such as *Bartonella*, syphilis, Lyme disease and toxoplasmosis.^{1,2} As mentioned by the authors, there have been no reported cases of Lyme disease acquired in Singapore to date. The cases of Lyme disease are largely centred in North America and Europe.³

The Centers for Disease Control and Prevention (CDC) recommends a two-tiered approach to testing for Lyme disease, which consists of initial IgM and IgG quantitative ELISA, followed by confirmation of all indeterminate or positive ELISA test with separate IgG and IgM western blots. Without a significant travel history, it is possible that the initial Lyme serology was a false positive.

Bartonella infections have been reported in the Asian population. Pets, particularly cats and dogs, represent a large reservoir of hosts of *Bartonella* species. In Singapore, seroprevalence of *Bartonella henselae* in cats has been reported as 47%,⁴ although there is no data on the incidence in dogs. *Bartonella henselae* is more commonly described to cause cat scratch disease and while it is also found in

dogs, other subspecies such as *Bartonella vinsonii* is more commonly associated with dogs. In Singapore, brown dog ticks (*Rhipicephalus sanguineus*) are the most common ticks found on dogs. Brown dog ticks can carry *Bartonella* species.⁵ The treatment for both Lyme disease and *Bartonella* infection is similar, with both organisms responding to ceftriaxone. Further laboratory investigation to rule out other infectious causes such as *Bartonella* should be sent for the patient.

REFERENCES

1. Brazil PW, Lee AG. Optic disk edema with a macular star. Mayo Clin Proc 1996; 71:1162-6.
2. Ghauri RR, Lee AG. Optic disk edema with a macular star. Surv Ophthalmol 1998; 43:270-4.
3. Hubálek Z. Epidemiology of Lyme borreliosis. Curr Probl Dermatol 2009;37:31-50.
4. Nasirudeen AM, Thong ML. Prevalence of *Bartonella henselae* immunoglobulin G antibodies in Singaporean cats. Pediatr Infect Dis J 1999;18:276-8.
5. Satta G, Chisu V, Cabras P, Fois F, Masala G. Pathogens and symbionts in ticks: a survey on tick species distribution and presence of tick-transmitted micro-organisms in Sardinia, Italy. J Med Microbiol 2011;60:63-8.

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