

New-onset Bell palsy and Lyme disease

Scenario

You are seeing a healthy-looking 46-year-old man for follow-up. He had presented to the emergency department with sudden onset of left-sided facial drooping. He had no relevant past medical history. The only relevant finding on physical examination apart from left facial drooping was an inability to completely close the left eyelid and several red blotchy areas with dusky centres on his back approximately 2 cm in height and 3 to 5 cm in length. Routine bloodwork results were normal. On closer questioning the patient reported frequent hiking in New England, Quebec, and Ontario over the summer. His diagnosis was probable early disseminated Lyme disease presenting as Bell palsy with multiple erythema migrans lesions. Serology for Lyme disease was ordered, and he was prescribed 100 mg of oral doxycycline twice a day for 10 days until he saw you for follow-up.

Evidence

Lyme disease is caused by the spirochete *Borrelia burgdorferi*, which is transmitted by black-legged ticks in eastern North America. It is characterized by 3 stages: early, early disseminated, and late disseminated disease. Lyme disease is on the rise in both Canada and the United States. Recent statistics in Canada show a 6-fold increase in the number of reported cases between 2009 and 2015, with most local cases occurring in Ontario, Quebec, and Nova Scotia.¹ In the United States, Lyme disease cases are concentrated in the northeastern states and the upper Midwest.² Lyme disease is slightly more common in men (56% of reported cases) in Canada, and there is a bimodal distribution by age with high incidence in adults aged 45 to 74 years and in children aged 5 to 9 years.¹ The most common presenting symptoms are an erythema migrans rash (74.2%) and arthritis (35.7%). However, Bell palsy is not rare—it has been found in 8.2% of reported cases in Canada.¹

There are 2 reasons why it is important to consider Lyme disease when a person presents with Bell palsy. First, it is easy to miss: people with facial palsy caused by Lyme disease can present without any other sign or symptom, and idiopathic Bell palsy might be the first diagnosis that comes to mind. If left undetected, it could lead to early or late disseminated Lyme disease, which is more difficult to treat. Second, one could do harm by treating it as idiopathic Bell palsy. Administering corticosteroids is the routine treatment and, because Bell palsy has been linked to viral infections, it is sometimes treated with antivirals as well.³ But antivirals will not help, and a recent study found worse long-term outcomes associated with corticosteroid use in acute Lyme disease facial palsy.⁴

La traduction en français de cet article se trouve à www.cfp.ca dans la table des matières du numéro de décembre 2017 à la page e509.

Bottom line

Lyme disease can be difficult to diagnose, but because of the rising incidence in Canada it is important to maintain a high index of suspicion. Laboratory diagnosis is a 2-step process.⁵ In this case, the emergency physician ordered the screening ELISA (enzyme-linked immunosorbent assay) for your patient. If the ELISA result is equivocal or positive, order a Western blot. A positive Western blot result confirms the diagnosis.⁵ Lyme disease should be considered in any patient with a new onset of Bell palsy. Current treatment recommendations for early disseminated Lyme disease with central nervous system involvement include ceftriaxone and doxycycline.⁶ For this patient, you order a Western blot, extend his prescription of doxycycline to complete a full 21-day course, arrange follow-up, and reassure him that most Lyme disease facial palsies resolve. 🌿

References

1. Gasmi S, Ogden NH, Lindsay LR, Phillips J, Burns S, Fleming S, et al. Surveillance for Lyme disease in Canada: 2009–2015. *Can Commun Dis Rep* 2017;43(10):194-9.
2. Centers for Disease Control and Prevention. *How many people get Lyme disease?* Atlanta, GA: Centers for Disease Control and Prevention; 2015. Available from: www.cdc.gov/lyme/stats/humancases.html. Accessed 2017 Sep 25.
3. Gagyor I, Madhok VB, Daly F, Somasundara D, Sullivan M, Gammie F, et al. Antiviral treatment for Bell's palsy (idiopathic facial paralysis). *Cochrane Database Syst Rev* 2015;(7):CD001869.
4. Jowett N, Gaudin RA, Banks CA, Hadlock TA. Steroid use in Lyme disease-associated facial palsy is associated with worse long-term outcomes. *Laryngoscope* 2017;127(6):1451-8. Epub 2016 Sep 6.
5. Lindsay LR, Bernat K, Dibernardo A. Laboratory diagnostics for Lyme disease. *Can Commun Dis Rep* 2014;40(11):209-17.
6. Hatchette TF, Davis I, Johnston BL. Lyme disease: clinical diagnosis and treatment. *Can Commun Dis Rep* 2014;40(11):194-208.



CCDR Highlights summarize the latest evidence on infectious diseases from recent articles in the *Canada Communicable Disease Report*, a peer-reviewed online journal published by the Public Health Agency of Canada.

This highlight was prepared by Dr Patricia Huston, a family physician, public health physician, and Editor-in-Chief of the *Canada Communicable Disease Report*.