

Lyme Disease Developing During Hyperbaric Oxygen Treatments

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Background

- Lyme disease (LD) is the most common vector-borne disease in the United States and is endemic in the Northeast.
- LD is caused by the spirochete, **Borrelia burgdorferi**.
- Borrelia burgdorferi is transmitted by the <u>Ixodes scapularis</u> (black legged/deer)tick. The tick must be attached for at least 36 hours to transmit the infection.
- Incubation period ranges from 3 to 30 days, with 7 to 10 days being the usual incubation period.
- Hyperbaric Oxygen Treatments (HBOT) have been recommended by some as treatment for both acute & chronic Lyme Disease.
- One presumed mechanism is that hyperbaric oxygen prevents the growth of, or is toxic to, Borrelia burgdorferi.
- Our center is located in an area that has been classified by the CDC as a high incidence state for LD (52 reported cases of LD per 100,000 people in 2016).
 Because of this we are more likely than many centers to have a patient develop LD during treatment.

Case Report

- 77 yo man receiving HBOT for radiation cystitis.
- On arrival for his 29th HBOT he asked the staff to look at a rash that had developed at the site where he had removed a tick 10 days earlier. The tick was removed after his 20th HBOT. After removing the tick, he had 8, 90-minute HBOTs at 2.4 ATA prior to onset of the rash.
- The rash was the classic **Erythema Migrans** (bulls eye) rash.
- He was seen by his PCP who diagnosed LD and he was treated with doxycycline.
- The case is unique because the patient was undergoing HBOT when he had the tick bite and during the development of the infection.

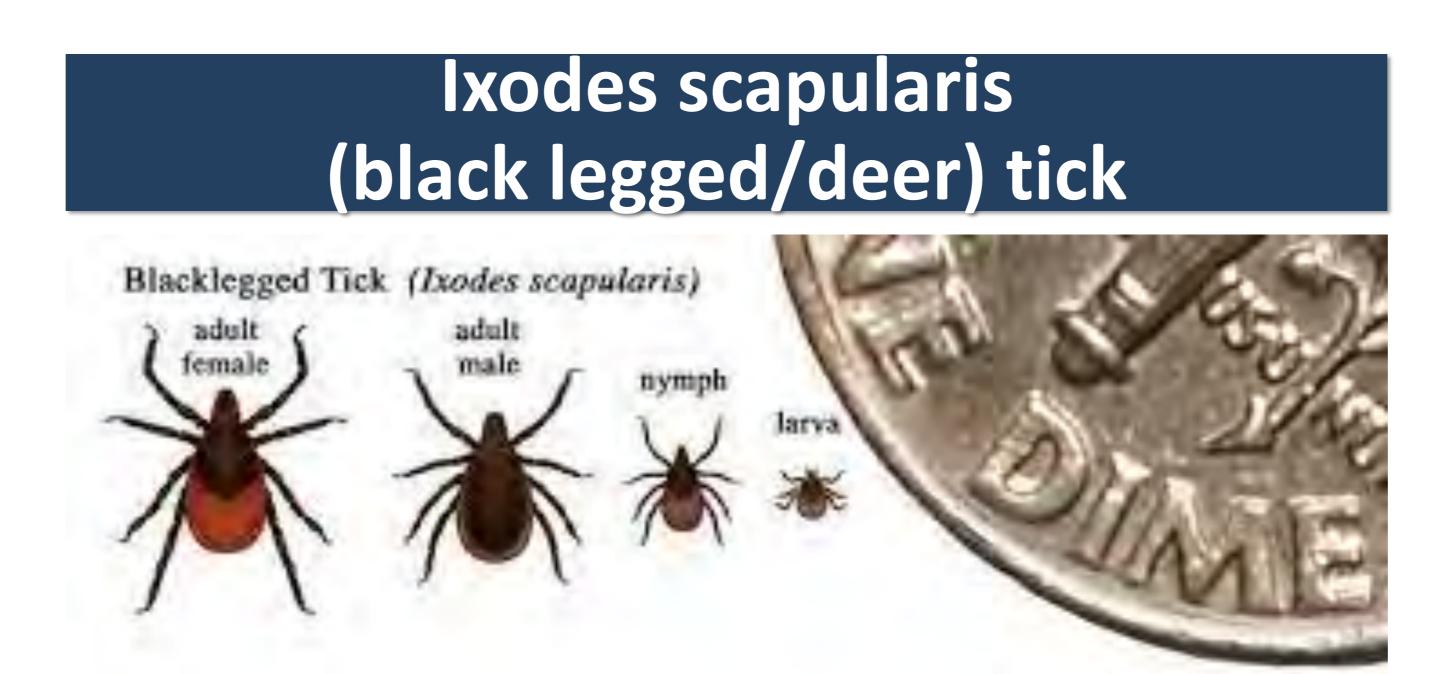
Discussion

- The tick bite and development of LD clearly occurred during the course of HBOTs.
- Although this is a single case, the fact that the patient developed LD during HBOT does not support the hypothesis that HBOT prevents LD.

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Borrelia burgdorferi







Photos from Centers for Disease Control and Prevention.

