A DISCUSSION OF LYME DISEASE

According to the Centers for Disease Control and Prevention (CDC), the quad-state area of NY, NJ, CT, and PA is one of the highest risk areas for Lyme disease transmission in the country

Lyme disease is caused by the spirochete bacteria, Borrelia burgdorferi, and is transmitted through the bite of an infected tick. Although not all ticks are infected, in our region the black-legged tick (*Ixodes scapularis*) is the common carrier of this illness. The disease is so prevalent in this area because of the abundant white-tailed deer, an intermediate host.

Lyme disease can be difficult to diagnose in the horse, as symptoms can be very vague, and mimic other diseases. Blood testing for antibodies to the bacteria is the most reliable indicator of exposure to the organism. Mid-Hudson's veterinarians have experience with the lab tests that check the level of blood serum antibodies to the Borrelia organism. The first test is manufactured by IDEXX and is called the 4-Dx SNAP test. This is a quick test to screen for Lyme and Anaplasma using the canine 4-way test (Heartworm, Anaplasma, Ehrlichia, and Lyme). The Lyme and Anaplasma antibodies in horse blood can cross-react with the Canine test, allowing veterinarians to use it as a quick screener for these two tickborne disease causes. The Multiplex test is used at Cornell University's Animal Health Diagnostic Center (AHDC) to detect the antibody levels to 3 outer surface proteins of the organism (ospA, ospC, and ospF). Each outer surface protein indicates a different stage of antibody production, and elevations of each (or in combination with each other) indicate different levels of infection or exposure. Because a positive test result only indicates levels of exposure, reading an individual horse's Lyme test results is an art. Interpretation of the results in combination with the symptoms in the equine patient is key.

All of the canine Lyme vaccines produce antibodies that will render a positive ospA, which is why the ospA levels in the Cornell Multiplex test are used to assess whether a horse has been vaccinated at all, or adequately vaccinated. Because there is no Lyme vaccine approved for use in horses, many veterinarians are comfortable with administering the canine Lyme vaccine twice a year. Obviously the canine Lyme vaccine generates antibodies in the horse, because those antibodies are visible using the Lyme Multiplex test. However, there is no definitive test for exactly how protective the canine Lyme vaccine is in horses.

An ounce of prevention

Of course, because "an ounce of prevention is worth a pound of cure", and because ticks carry plenty of other damaging organisms besides the bacterium that causes Lyme disease, we should be focused more diligently on preventing the next tick bite. Prevention centers on recognizing when to be most vigilant in the prevalent times of the year that ticks are active.

Because the ticks are more prevalent during the two wet seasons (April/May, and Oct./Nov.), horse owners should focus their most aggressive measures in these seasons. **Fly sprays** and topical preparations can help repel ticks, as they do flies. They should be concentrated on the jawline, throat, lower neck at the chest, pectorals, armpits, and flanks. Many vets recommend **Frontline** spray in these locations, although it is not labeled for use in horses. **Equi-Spot** is a brand of top-spot application vial containing concentrated permethrin/pyrethrin fly repellent that is labeled for every 2 week use. This does seem to help repel ticks and flies, but the label demonstrates the application on the topline of the horse, which doesn't make much sense in relevance to ticks. If you bathe your horse frequently in the summer (with soap), you will wash it off. Many clients have used the fly repellent **ear tags** for cattle - basically stringing them onto a string or hair ribbon and hanging them around their horses' necks, or attaching them to the cheek-rings of their halters. These are very inexpensive, but only mildly effective - but may help the retired horses that are turned out in large, weedy pastures.

This past summer/fall was quite rainy - that rain tends to foster more tick activity. Be mindful to carefully examine your horse after rainy days to remove ticks promptly. Horses at high risk for Lyme disease are those who have existing arthritis, those who have large paddock turnout, and retired horses (because they might not get examined daily). Talk to your veterinarian about methods to prevent Lyme disease, routinely testing your horse, and discuss using the canine Lyme vaccine for your horse.

It is easy and affordable to pair a Cornell Multiplex Lyme test with your annual Coggins test to avoid an extra needle for your horse !

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