VM178

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Equine Piroplasmosis: Focus on Prevention[1]

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As of September 2010, almost 500 horses in the United States have tested positive for equine piroplasmosis (EP). Although this disease can cause severe illness in horses necessitating euthanasia, it can also be silent and cause no apparent signs at all. Understanding how horses can get the disease, what the signs are, and how we can prevent it are all critical for protecting our equine friends. Piroplasmosis is a reportable disease, and its emergence is affecting equine transportation across state lines and to other countries.

Piroplasmosis is caused by the protozoan parasites *Babesia caballi* and *Theileria equi* (formerly called *Babesia equi*). It also can affect donkeys, mules, and zebras; but clinical disease in those equids is rare. The disease is transmitted by ticks and other biting insects; however, shared needles and/or blood contamination has been implicated in several disease outbreaks. Once horses are infected with *T. equi*, carrier status may be lifelong. Carrier horses are also capable of transmitting the disease to ticks—vectors that can transmit it to other horses. The disease is considered endemic in Africa, Central and South America, Asia, the Middle East, the Caribbean, and the Mediterranean. The U.S. has not been considered an endemic region. When infection occurs, *T. equi* tends to be the most common agent, rather than *B. caballi*. However, infection with both parasites can occur simultaneously.

Once horses become infected with the parasite, it usually takes between 5 and 30 days for any signs of the disease to appear. As previously stated, infected horses may not have any signs of EP at all. Generally, affected horses display nonspecific signs that can look similar to other diseases. Fever, depression, anorexia, pale or yellow gums, and swelling of the limbs or along the ventral abdomen (edema fluid accumulation) have been commonly reported. Reddish-brown or discolored urine may also be observed. Laboratory abnormalities typically include anemia (low red blood cell count) and low platelet counts.

Several laboratory tests are available for diagnosis of EP. Occasionally, the parasite can be seen on microscopic examination of a blood smear. The most common tests are blood tests that look at antibodies to the organism. The U.S. Department of Agriculture (USDA) standard test is the cELISA (competitive enzyme-linked immunosorbent assay). Specific laboratories (the National Veterinary Services Laboratories and Texas Veterinary

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Diagnostic Services Laboratories) have been identified to run the tests and report the results. Recently, the Bronson Animal Disease Diagnostic Laboratory (BADDL, formerly Kissimmee Animal Disease Diagnostic Laboratory) in Florida was approved by the USDA for equine piroplasmosis testing. BADDL can test blood samples for interstate and intrastate purposes, but the National Veterinary Services Laboratories is still testing all international transport samples.

Horses that test positive for equine piroplasmosis MUST be quarantined. Local veterinarians can work with state and federal veterinarians to ensure that manageable quarantine guidelines are being followed and are in place. Although there are several drugs that have been identified for treatment of piroplasmosis, the organisms can be refractory to treatment, and the carrier state is difficult to clear. Euthanasia for positive horses is not necessarily required, nor is it being recommended in every case by the USDA, especially since so many positive horses are asymptomatic. State and USDA veterinarians are working in conjunction with local veterinarians and owners to determine the best recommendations for each positive horse. Some owners elect to transport positive horses out of the country—to countries that have endemic piroplasmosis—but that is not a palatable option for most. In addition to quarantine, there is a treatment research program available for positive horses. This program is in conjunction with Washington State University and Dr. Don Knowles. Owners and their local veterinarians work with the USDA and Dr. Knowles to determine if they have a horse that is eligible for enrollment.

The Florida Department of Agriculture and Consumer Services, Division of Animal Industry, has placed restrictions on horses originating from piroplasmosis endemic areas. Currently, the Florida State Veterinarian has declared all counties in the state of Texas endemic for equine piroplasmosis. Therefore, all horses entering Florida from Texas must be tested within 30 days of coming into our state. State requirements are dynamic, and each state has its own guidelines. If you plan to transport your horse out of state, be sure to check with the state of origin and all of the states in between for their active requirements. Currently, there are no positive horses in Florida (according to the Florida Department of Agriculture).

The outbreak of equine piroplasmosis in Florida in 2008 identified 20 positive horses. Twenty-five quarantines were placed in Manatee, Polk, DeSoto, Lake, and Dade counties; seven premises had positive horses. The last premise in Florida was released from quarantine in February of 2009. Since then, additional positive cases were reported in September 2010. An active investigation is still underway. Fortunately, tick surveillance in Florida thus far has not revealed evidence of natural (tick) transmission. Blood contamination from shared needles was implicated in the outbreak. Unlike Florida, tick transmission has been identified in the Texas outbreak. The USDA and state veterinarians are involved in an ongoing investigation in that state.

Fortunately, it does not appear that tick transmission has been significantly involved in EP transmission outside of the affected premises in Texas. However, people can spread this disease from horse to horse, and we can prevent that mode of transmission. All dental, surgical, and tattoo equipment must be thoroughly disinfected between horses. Horses have contracted the disease through the use of shared needles and/or syringes, as well as from blood transfusions. A new sterile needle and syringe should be used for each injection, whether into a muscle or a vein. Additionally, a previously used needle should never be inserted into a drug or vaccine multidose vial—use a clean one each time. Work with your veterinarian to ensure that all equipment is thoroughly cleaned and disinfected between horses. If you notice that your horse has a fever, lethargy, reduced appetite, or any of the aforementioned clinical signs, contact your veterinarian for an evaluation. EP is still a very uncommon disease in the U.S., but it is critical to be vigilant and follow preventative measures to protect our horses.

Further References:

1. http://www.aphis.usda.gov/animal_health/animal_diseases/piroplasmosis/downloads/ep_protect_your_horses_en_sp.pdf

2. http://www.aphis.usda.gov/publications/animal_health/content/printable_version/fs_equine_piro.pdf

3. http://www.doacs.state.fl.us/ai/index.shtml