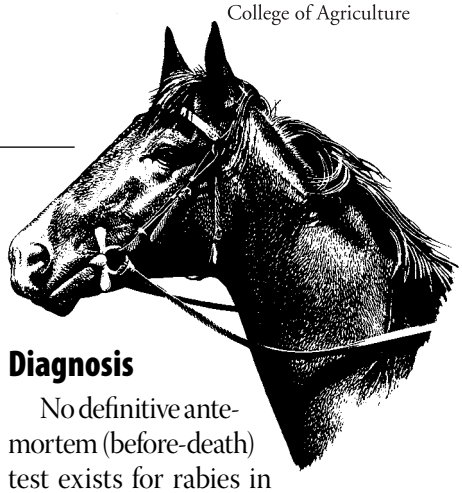
ASC-125

UNIVERSITY OF KENTUCKY College of Agriculture

Rabies in Horses

Fernanda C. Camargo, Department of Animal and Food Sciences



History

Rabies in the horse is a relatively uncommon disease. Every year about 30 to 60 cases of rabies in horses are confirmed in the United States. In 2008, a total of 6,843 cases of rabies were confirmed in animals. Wild animals account for 90% of reported cases of rabies, with raccoons being the most frequently reported rabid wildlife species (34.9%), followed by bats (26.4%), skunks (23.2%), foxes (6.6%), and other wild animals. Of the total number of cases reported in 2008, 471 were domestic animals, with horses making up 7% of those animals. Generally in Kentucky, 30 to 50 total cases of rabies are confirmed in animals every year, of which one to three are horses. Although the number of confirmed rabies cases in horses is low, the potential for human exposure makes it important to discuss the causes of rabies and its diagnosis, treatment, and control. It is noteworthy that the American Association of Equine Practitioners and the American Veterinary Medical Association include rabies as one of the diseases for which horses should be vaccinated every year.

Causes

Rabies is a fatal viral disease that affects the nervous system. Animals and humans contract the virus from the saliva of an infected animal, either through a bite or by the saliva contaminating an open wound. All species of mammals are susceptible to infection by the rabies virus, but only a few species are important as reservoirs for the disease. In Kentucky, skunks are the most important reservoir. Rabid skunks are the primary way that horses contract rabies. Skunks are nocturnal, so if one is seen during the day it should be suspected as being rabid. Horses are very curious, especially foals and yearlings, and will investigate wildlife roaming the pasture, which exposes them to bites on the muzzle, face, or legs. The incubation period for the disease is usually two to six weeks, although sometimes it may take up to three months before clinical signs appear. The length of incubation will largely depend on the location of the infective bite. For example, clinical signs will appear more quickly if the bite is on the face and more slowly if the bite is on the legs. The virus reaches the spinal cord and brain through the nerves and causes rapidly progressive and fatal encephalitis.

Clinical Signs

Clinical signs can include strange behavior, lameness, neurological deficits, self-mutilation, fear, aggressiveness, and depression. Clinical signs are progressive from onset until death, which generally happens by day 10. It's important to think of rabies first when dealing with unexplainable clinical signs. The most common sign of rabies is behavioral changes. The majority of horses initially are dull and depressed. A low-grade fever usually is present along with convulsions, increased sensitivity at the injury site, lameness, gnawing of the affected area, and anorexia. Often rabies is not diagnosed upon the initial onset of clinical signs, as the horse is still calm, alert, and eating. Other important and fatal diseases also cause neurological clinical signs in horses, so if your horse is showing any neurological signs, it is extremely important that you contact your veterinarian immediately.

Diagnosis

No definitive antemortem (before-death) test exists for rabies in horses. Clinical signs are suggestive but nondiagnostic. The diagnosis is made by postmortem (after-death) evaluation of the brain of the suspected animal. Therefore, a veterinarian will rule out other neurological diseases, such as Eastern and Western Equine Encephalitis, West Nile Virus, Equine Herpesvirus, lead poisoning, moldy corn poisoning, Equine Protozoal Myelitis, and trauma to the brain or spinal cord.

Postmortem diagnosis can be made by submitting the intact head to a designated public health laboratory. In transit, the head should be refrigerated with wet ice but not frozen. Diagnosis can be performed accurately and rapidly within hours using the fluorescent antibody (FA) test to stain sections of the brain for the presence of rabies virus. The FA test may be confirmed by mouse inoculation studies or isolation of the virus in tissue culture.

A positive test means treatment should be started for anyone who has come in contact with the rabid animal.

Treatment

At present, there is no effective treatment for horses (and other animals, vaccinated or unvaccinated) with clinical rabies. In humans, there is a series of shots given after a suspected bite, but it must be given before the onset of symptoms occurs. With horses, rabies

infection generally is not known until clinical signs appear. If a horse has been previously immunized, an immediate booster shot should be given. Horses with clinical signs of rabies should be isolated to prevent human exposure to the virus. One of the most important things to remember about rabies is that it is considered a zoonotic disease and as such is transmissible from animals to humans. Animals with suspected rabies should be handled only by trained individuals who have had the appropriate rabies vaccination. Call your veterinarian if you suspect rabies in your horse.

Control

All horses, regardless of breed, gender, or use, should be annually vaccinated against rabies. The unvaccinated horse should receive a primary set of three doses and annual boosters. Vaccinated horses and broodmares should receive annual boosters.

Several practical steps can be taken to protect against rabies:

1. Establish with your veterinarian a routine yearly rabies vaccination program for horses, dogs, and cats on your farm.
2. Discourage adoption of wild animals as pets.
3. Be on the alert for wild animals that exhibit abnormal behavior.

References

American Association Equine Practitioners (www.aaep.org)

Centers for Disease Control and Prevention, Rabies. (http://www.cdc.gov/RABIES/)

Wilkins, P.A., Del Piero, F. Rabies. In: Equine Infectious Diseases. Editors: D.C. Sellon and M.T. Long. Saunders-Elsevier, Saint Louis, Missouri, pp. 185-1191, 2007.

Issued 6-2010