

Dealing With “Dummy Foals” or Hypoxic Ischemic Encephalopathy (HIE)

by HEATHER SMITH THOMAS

“Dummy Foals,” a problem that occasionally confronts the horse breeder, can be both a frustration and a challenge. Dr. William V. Bernard discussed this condition at the 2000 North American Veterinary Conference, an event held annually in Orlando, Florida, as a continuing education meeting for veterinarians who work with all species. Dummy foals are also called barkers, wanderers and convulsants, but Dr. Bernard termed the condition HIE—Hypoxic Ischemic Encephalopathy—based on a similar condition found in human infants.

He says that bleeding within the skull resulting from the increased pressure on the central nervous system, which occurs either during the birth process or following trauma to the head, has been suggested as one of the causes of central nervous system disease in the newborn. Such pressure changes within the blood vessels and/or any related hemorrhage may also be due to a shortage of oxygen during the birth process. Many newborn foals with central nervous system disturbances have suffered decreased oxygen supply during birth. This factor, cou-



pled with a pathologic history similar to that described in other species with experimentally induced oxygen shortage, suggests that hypoxia (reduction of oxygen supply to the tissues below healthy levels) and ischemia (deficiency of blood to the tissues) are important factors in this dummy syndrome, according to Bernard.

The signs of this problem can vary greatly. Mild cases may show signs that include loss of affinity for the mare, inability to nurse, wandering aimlessly, intermittent periods of depression, and/or “stargazing.” The foal may have spasms of the facial muscles, curl its lip or exhibit chewing motions, or even have abnormal respiratory patterns. On rare occasions, a foal may exhibit abnormal vocalizations or “barking.” The affected foal may sleep a lot or prove difficult to arouse when sleeping. These foals with mild signs may recover without suffering further problems, but sometimes the condition may progress to a more obvious and severe indication of central nervous system disease.

In severe cases, the foals may be completely unaware of their surroundings or may even seem blind. Often this condition pro-

gresses to convulsions. Seizures may come on suddenly, but the foal has usually shown one or more early signs before it experiences convulsions. The foal may show some stretching activity (which may actually be a mild early seizure) before experiencing a seizure. While lying down, the foal extends its front legs and lifts its head before relaxing back to a sleeping position.

Bernard states that the diagnosis of this condition can often be difficult and depends mainly on the elimination of other possibilities. Diseases or conditions that may result in seizures in horses are many, but most of these do not cause seizures in newborn foals. However, the conditions that can cause central nervous system derangement in newborns include: cerebral contusion or hemorrhage; hydrocephalus (water on the brain); and bacterial meningitis. The differentiation between a foal with hydrocephalus and one with HIE can be difficult, he says. In either case, the central nervous system abnormalities are not always present at birth, but may appear later. The seizures in foals with water on the brain can be very severe and violent, as well as difficult to control. The foal with meningitis may have a fever.

Bernard says that supportive care is crucial for saving a foal with HIE. The treatment for seizures will vary, depending on their severity. A mild, brief seizure may need no treatment, but if the convulsions recur or become severe then treatment will be necessary to reduce stress and conserve energy, thus preventing permanent injury to the foal. A variety of anti-convulsant drugs are available to control seizures, and the choice of drugs depends on whether immediate control is needed or if a more long-term medication is necessary.

If the latter is necessary, barbiturates are used and they are generally safe if given slowly and in proper dosage. Phenobarbital, for instance, can be administered over a 20 to 30 minute period, halting the medication if the desired effects are achieved before the full dose is given. Diluting the drug in saline is useful, says Bernard, because it makes gradual administration easier. The drug can be repeated as needed, and once the seizures are controlled then oral administration can be used to prevent them from recurring.

Bernard also recommends broad spectrum antibiotic treatment for prevention of infection in the compromised foal. Nutritional therapy is also of crucial importance if the foal cannot nurse. If he can stand but won't suckle,

Bernard suggests the use of a nasogastric tube, left in place for frequent feedings. During a 24-hour period, the foal needs to be given at least 10 percent of its body weight in milk, which should be split into individual feedings every one to two hours.

If the foal is unable to stand, but can roll up onto his chest with his head up, then cautious tube-feeding is still possible but care should be taken not to overfeed the recumbent foal. If the foal is in a stupor and unable to raise its head, Bernard recommends that either dextrose be given intravenously or a more complex nutrition be provided via some other route other than through the digestive tract. Thus, with such diligent and appropriate nursing care some of these foals will thankfully recover.