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How to Manage a Collapsed Foal

Foals have seemingly endless energy, darting around their fields, playing with their pasturemates, and recharging with a quick nap and a drink from Mom. But, occasionally, a foal develops a health problem that zaps that energy and leaves him in a collapsed heap, looking sickly and vulnerable. What should you do if this happens to your foal?

Emily Haggett, BVSc, Dipl. ACVIM, MRCVS, an associate at Rossdales Equine Hospital, in Suffolk, U.K., reviewed the steps veterinarians should take when managing a collapsed neonatal foal in the field at the 2014 British Equine Veterinary Association Congress, held Sept. 10-13 in Birmingham, U.K.

If a foal has collapsed, cannot rise, or is weak, don't try to handle the situation on your own: "Any weak or collapsed foal should be examined by a veterinarian as soon as possible," Haggett said. Common causes of collapse, some of which could be life-threatening if not treated promptly and properly, include:

- Sepsis (a body-wide inflammatory state due to a known or suspect bacterial infection);
- Neonatal maladjustment syndrome (often called "dummy foal syndrome"; a condition that occurs within the first few days of life after suffering a lack of oxygen delivery to the brain before, during, or immediately after birth); - Prematurity;
- Neonatal isoerythrolysis (acute hemolytic anemia caused by ingesting antibodies in the mare's colostrum and milk that attack the neonate's red blood cells);
- Enterocolitis (inflammation of the small intestine and colon);
- Uroperitoneum (the accumulation of urine in the peritoneal [abdominal] cavity, often from a ruptured bladder);
- Hypoglycemia (low blood sugar);
- Colic;
- Meconium (the first manure a foal will pass) impactions;
- Congenital abnormalities; and
- Trauma.

When the veterinarian arrives, he or she should first evaluate the foal and try to identify the most likely causes of the animal's issues, Haggett said.

"Evaluation of the foal should include a brief history and a thorough physical examination," she said.

History For the history, be prepared to tell the veterinarian:

- How long the foaling was *in utero* and whether the dam had any problems during pregnancy;
- Whether the foaling was observed or assisted, how long parturition lasted, and whether there were any problems; and
- How long the foal took to stand and nurse, how he or she behaved post-foaling, when he or she passed meconium and urine, and whether the veterinarian administered any treatments to the foal immediately following birth.

Based on this information, the veterinarian will begin to narrow down the different diagnoses. For instance, she said, "factors such as premature lactation, decreased colostrum intake, and placentitis should increase the suspicion of possible sepsis." On the other hand, she said, an abnormal or prolonged delivery or abnormal behavior after birth should raise the suspicion of neonatal maladjustment syndrome.

Physical Exam The veterinarian should perform a physical exam to gather additional information about the foal's condition. During the exam, Haggett said, it's important to evaluate:

- The cardiovascular system, for signs of dehydration, hypovolemia (low blood volume), and peripheral perfusion adequacy (blood delivery to the extremities, such as the limbs and ears);
- For signs of sepsis, including mucous membrane hyperemia (reddening caused by increased blood flow), injection (dark red to 'muddy' color), or petechiation (blood spots); coronary band hyperemia; or uveitis (inflammation of the eye's uvea);
- The joints and umbilicus for signs of infection;
- The respiratory tract, including checking respiratory rate and effort, listening to the foal breathe with a stethoscope, and palpating the ribs to check for fractures;
- The gastrointestinal tract, including listening with a stethoscope for gut sounds, palpating the abdomen to check for distension or fluid accumulation, and performing a digital rectal exam to check for a meconium impaction; and
- The foal's neurologic status, including his level of responsiveness to stimuli and pupillary light reflexes and any signs of seizures.

Once the veterinarian has completed the physical exam and narrowed down the possible diagnoses, he or she can begin emergency treatment.

Emergency Treatment "The majority of collapsed neonatal foals are hypovolemic, and emergency fluid replacement should be initiated," Haggett said. She recommended providing an initial bolus of about 20 milliliters per kilogram of bodyweight (ml/kg BW) over about 20 minutes before reevaluating the foal for signs of improvement.

"If you feel that the foal is still hypovolemic you should give a second bolus," she said. "Up to three boluses of 20 ml/kg BW can be given."

Haggett said if the foal is hypoglycemic, which many collapsed foals are, veterinarians can safely add 20 ml of 50% dextrose solution to each fluid bag. She noted, however, that it's ideal to measure the foal's glucose level with a hand-held glucometer to ensure he's receiving the appropriate amount.

Haggett also encouraged veterinarians to act quickly if they suspect sepsis, as this condition can prove dangerous—even fatal—for neonates.

"Broad-spectrum antimicrobials should be administered as soon as possible if you have any concerns about the possibility of sepsis," she stressed.

Finally, she said, "Emergency nutrition can be provided in the form of milk or colostrum to foals which are not too hypovolemic or hypoglycemic." She recommended using a nasogastric tube and administering a small amount (about 250 ml) to start.

Once the foal is stabilized, the veterinarian can create a treatment plan.

Ongoing Treatment "Your treatment plan must be based on a number of factors, including the severity of the foal's illness, your suspected diagnosis, the availability of people to provide ongoing care, and the financial wishes of the owner," Haggett said.

Many foals, she said, can successfully recover in a field setting with care from both a veterinary professional and their owners. For these foals, Haggett said, "You should formulate a treatment plan which should include ongoing fluid therapy and nutritional support, prevention of sepsis, nursing care, and care of the mare. Many foals can be managed with small boluses of intravenous fluids, milk feeding via nasogastric tube, and prevention of sepsis with antimicrobials and plasma, if necessary."

Some foals, however, will need to be hospitalized to effectively manage their problems, and Haggett said it's important to identify these patients as early as possible.

"Early referral has a very positive impact on the likelihood of survival," she said. "Conditions which are difficult to manage in the field are severe sepsis, prematurity, persistent seizures, and uroperitoneum."

Unfortunately, some foals won't be able to overcome their illnesses; in these cases it will likely be up to the veterinarian to make a difficult recommendation to the owner. "In certain situations, if you recognize that the foal is suffering from severe systemic disease and referral is not an option, euthanasia may be the best option."

Take-Home Message

Any time an owner is faced with a collapsed foal, it's crucial to contact the veterinarian and begin treatment as soon as possible. Many neonates will recover well, and prompt treatment improves the foal's odds of having a long life ahead.