

COLIC: UPDATES AND PREVENTION

By Dr. Nancy Loving

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Colic is one of those emergency crises that horse owners seek to avoid. Based on information from the National Animal Health Monitoring System (NAHMS) survey, for every 100 horses, there will be 4.2 colic events every year. 1.2 percent of these events will be surgical, and 11 percent will be fatal. The objective of a conscientious horse owner is to find ways to prevent colic so your horse doesn't become one of these statistics, while also understanding how to appropriately manage colic if it does occur.

COLIC & VITAL SIGNS

A colicky horse might appear depressed or "zoned-out," or he may display anxious behavior like pawing, looking at his sides, lying down, getting up, rolling, and a general state of distress. A thorough veterinary examination helps determine the cause of these behaviors, and also rules out other medical conditions like tying-up, laminitis, pneumonia or foaling difficulties. When you call your veterinarian to attend your horse, it is greatly helpful to have information about your sick horse's vital signs so a determination can be made about the seriousness of the horse's condition, and how quickly the horse needs medical attention.

Learn how to take your horse's vital signs -- heart rate, temperature, capillary refill time, and whether or not there are audible gut sounds. Normal heart rate is about 32 to 40 beats per minute (bpm). A heart rate over 64 bpm signifies pain and possibly a more serious problem. A stethoscope is the easiest means of obtaining a horse's heart rate, but if you don't have one, you can take a pulse from the big vessels behind the fetlock or along the jaw. The digital pulses on a limb are often difficult to feel on a healthy horse that isn't experiencing any problems, so practice in advance.

Normal rectal temperature in an adult horse is 97 to 101 degrees Fahrenheit, while a foal may normally run up to 102 degrees Fahrenheit. A horse may feel sick, depressed and off his feed for many reasons, including a fever, but a fever may also be a sign of some serious intestinal problem related to colic, like a necrotic, leaking or ruptured bowel.

The gums should be healthy and pink and should return to that color within two seconds of pressing with your finger on the gum line above the teeth and then releasing. This is referred to as capillary refill time. A longer time to return color to the gums indicates that the circulatory system is in distress. Gums that are pale with a purple flush around the edges of the teeth, called injection or margination, denotes endotoxin in the circulation as a result of bacterial overgrowth from gut stagnation.

WHAT AND WHAT NOT TO DO

Historically, horse owners have walked a colicky horse while awaiting arrival of the vet. This is an overrated and old myth; a horse should be kept walking only if he persists in trying to roll or thrash and is a danger to himself or humans. If the horse will lie quietly, you can let him be. When you first discover your horse has colic, it is valuable to try trotting him vigorously on the longe line for about 15 minutes to see if that will ease pain from a gas or spasmodic colic. A trailer ride also jiggles the bowel to achieve similar relief for a simple colic.



Under no circumstances should non-steroidal anti-inflammatory medications (NSAIDs), like phenylbutazone or Banamine^R, be given without first discussing your case with your veterinarian. These drugs are capable of masking the pain of a surgical condition and thereby may delay appropriate treatment. In addition, a horse with intestinal stasis and poor motility may not absorb oral medications sufficiently to provide a therapeutic advantage when intravenous administration would work better.

VETERINARY ASSESSMENT

Once your vet arrives, your horse will be evaluated with a thorough physical exam. Additionally, your vet may conduct a rectal examination to determine if there is an impaction or a displaced bowel. A nasogastric tube passed into the nostril, down the esophagus and into the stomach is helpful to check for reflux and to administer fluids, electrolytes, and laxatives when indicated. Depending on the horse's condition, it might be appropriate for your horse to receive pain-relieving drugs and intravenous fluids to improve his comfort and to improve gut motility. The administration of ample IV fluids is highly effective in increasing fluid volume in the bowel; over-hydration of the intestinal tract and its circulation improves blood flow and motility that might relieve an impaction or return a mild displacement to normal.

In the event that a horse does not respond well to medical therapy in a reasonable time, the horse should be shipped to a referral hospital for further diagnostic workup and possible surgery. Abdominal ultrasound, abdominal fluid analysis, and blood analysis are helpful to perform on site at a referral hospital to gain as much information as possible about your horse's condition. In addition, precautionary steps will be taken to protect against laminitis, which is a possible side effect of severe colic due to circulatory disturbances created by the release of endotoxins associated with gut stagnation.

PREVENTIVE STEPS: UPDATES

There are steps a horse owner can take to minimize the risk of colic. Some of these strategies counter what has previously been believed as the "way" of administering horse care. Research and science have proven that what has been done in decades past is counterproductive to the best management practices for equine intestinal health.

Many practical measures rely on altering feeding practices, as for example, limiting the amount of grain fed – too much grain is known to disturb intestinal health. A pound or two a day is not necessarily problematic provided a horse also has access to 15 to 20 pounds of hay per day (for the average 1000 lb. horse), but in general, grain or concentrates should not be the first choice in nutritional options. Optimal digestion occurs in the large intestine, but grain is processed mostly in the small intestine yet is incompletely digested there. This results in passage of a lot of starch into the large intestine where it is not digested effectively. Subsequently, the large intestinal pH is altered to a more acid environment, which then causes the die-off of resident bacterial flora that are essential for efficient processing of fiber. Other bacteria also die in the altered environment, with the potential to release endotoxin into the circulation.

Grain also amplifies acid production in the stomach. Gastric ulcers are known to be more prevalent in grain-fed horses, especially when fasted for long periods between feedings. A horse with ulcers might suffer intermittent bouts of colic, be reluctant to work or is lack-luster in performance, and often has a poor appetite in spite of weight loss. Ulcers occur in as many as 93 percent of high-stressed horses (racehorses, high-level show horses) and 60 percent in the average riding horse or less intense show horse. Risk factors for ulcers include stress of any kind, such as transport, illness or injury, dehydration, confinement or social competition in a herd. NSAIDs (phenylbutazone or Banamine^R) are notorious in their propensity to induce gastric ulcers. Not all risk factors can be controlled, but offering free-choice hay and substituting other feeds, like soaked beet pulp or high-fat rice bran or vegetable oil, for grains helps to reduce the risk of developing gastric ulcers.



Gastric ulcers are confirmed and visualized with a gastroscope, which is a three meter long, fiberoptic tube with an attached camera that allows a view of the inside of the stomach. A horse must first be fasted for about 12 hours prior to passing the tube and scooping his stomach. Anti-ulcer medications are currently available as a safe means of treating a horse with gastric ulcers.

Feeding practices influence digestive efficiency in other ways: Grain ingestion reduces the fluid content of the bowel by 15 percent, and to compound the problem, in an effort for a horse owner to control a horse's daily caloric intake, a grain-fed horse is typically offered less hay. Yet, fiber is an essential component of intestinal health, and it also serves as a fluid reservoir in the bowel. The common practices of keeping horses in stalls for a large portion of the day and feeding them large meals only twice a day wreak havoc with their digestive health. Stall confinement increases the risk of colic by at least 50 percent. Intestinal motility is reduced by confinement and by fasting between large meals. With reduced intestinal motility comes the risk of impaction colic or gas distention. The best strategy for minimizing colic is to offer free-choice grass hay so a horse can "graze" intermittently through the day. Also, limit grain fed, while providing daily turnout and regular exercise.

Other causes of colic include sand ingestion, often related to restricted access to hay. Ample fiber in the diet is instrumental in moving dirt and sand through the digestive tract. If fiber is restricted and/or if a bored horse nibbles at remaining particles of hay on the ground, sand may accumulate in the bowel. The best prevention for sand colic is to feed ample hay, and, when possible, use feeders (like large tractor tires) to confine the hay and keep it from being strewn across the ground. Since many horses persist in throwing hay out of many forms of commercial feeders, sand ingestion cannot be prevented entirely – it is recommended to feed psyllium for a week each month to help move through any sand that has collected.

Obesity and parasites also are risk factors for colic, but a conscientious owner can prevent and manage these concerns. Your horse should be fed by weight, not volume since the density of hay varies from bale to bale. Pasture your horses on non-irrigated, dryland pasture when possible. If your only pasture option is a rich, irrigated field, then many problems, including obesity, can be avoided by fitting your horse with a grazing muzzle or by limiting turnout time. This prevents intake of highly fermentable, rich grass that can contribute to gas or spasmodic colic episodes.

Tapeworms have been identified to cause as many as 22 percent of spasmodic colic cases. Parasite control is managed with regular deworming schedules of the appropriate anthelmintics. It also is important to clean up manure at least twice a week to limit the development of other infective parasite larvae in areas where the horse might eat. It also helps to rotate your pastures to prevent overgrazing and to facilitate ultraviolet kill of remaining infective larvae.

IN SUMMARY

The ideal management that prevents colic includes the following recommendations:

- Feed at least 60 percent of the daily ration as forage (hay or pasture)
- When possible, pasture in non-irrigated fields and/or use a grazing muzzle to control weight and intake of rich forage
- Limit grain to as little as possible – none is preferable
- Substitute high-fat feeds and high-fiber feed for grain supplements when more calories are needed
- Provide feeding systems that limit the intake of sand and dirt
- Provide plenty of turnout and exercise each day
- Provide clean, ice-free drinking water
- Implement regular and frequent deworming programs for the herd



- Implement a herd health program of preventive care
- Minimize stress (transport, herd dynamics, housing, illness, injury) as much as possible

Not every one of these suggestions is feasible for every horse owner, but many practical steps can be taken to improve digestive health. Even the smallest details can make a large difference. In the overall picture, a healthy horse is a happy horse and able to perform to his best ability.

For more in-depth information, please refer to Dr. Loving's book, ***All Horse Systems Go: The Horse Owner's Full-Color Veterinary Care and Conditioning Resource for Modern Performance, Sport and Pleasure Horses.***

