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Colic in Horses

Fernanda C. Camargo, Animal and Food Sciences

Among the species of domestic livestock, the horse is the species that most commonly suffers from colic, which is a general term for abdominal pain. Colic is one of the leading causes of death in horses and should be of concern for horse owners. The anatomy and physiology of the horse's digestive tract and the management practices that people impose on horses seem to contribute to its occurrence.

Causes

Colic has many causes. These causes include not only diseases of the intestinal tract, but infections elsewhere in the body, pregnancy, sudden changes in the weather, feeding (frequency, quantity, or quality of feed), overexertion, and chilling.

Other causes include severe contractions of the intestines (spasmodic colic), intestinal obstruction (impaction colic), and twisted bowels or anything that prevents blood flow to an area of the intestine (strangulating colic). The possibility of an obstruction or twisted intestine should be diagnosed as early as possible; both are potentially life threatening and require surgery. Information follows about conditions that can lead to colic in horses.

Intestinal Parasites:

- Migrating strongyle larvae damage blood vessels in the intestines, decreasing blood supply and leading to necrosis, decreased motility, and pain.
- Large numbers of roundworms can impact or obstruct the intestines.
- Certain species of tapeworm attach to the ileo-cecal valve, which may obstruct passage of food to the cecum and lead to impaction, possibly resulting in telescoping of small intestine into the cecum (intussusception, which can lead to death if not caught and surgically removed in time).
- When the larvae of small strongyles migrate from the intestinal wall to the intestinal lumen, colic can result.
- Administering deworming medicine (anthleminitics), particularly to young horses overloaded with ascarids (a type of roundworm that affects young horses), can cause intestinal obstruction, colic, and even lead to death.

Infections or other unrelated conditions:

- Infections outside the intestinal tract, such as pneumonia, those of the urinary tract, or any infection caused by Gram-negative bacteria can lead to endotoxemia, which may present with clinical signs of colic.
- Lipomas (fatty abdominal tumors) can impede blood flow to an intestinal loop, causing ischemia—death of the intestinal tissue affected—and colic.
- Conditions affecting the locomotor system, such as laminitis and other forms of lameness, can also cause colic.

Diet and Management:

- Horses kept in sandy paddocks or overgrazed pastures are predisposed to suffer from "sand" colic, in which ingested sand obstructs the intestine.
- Obstruction may also occur if the horse ingests a foreign object—one of the reasons why it is important to keep horse pastures and stalls free of bailing twine, plastic bottles, and wraps, etc. Horses are generally selective eaters, but some horses may start to play with an object, enjoy the taste, and swallow it.
- Sudden changes in diet (either type or quantity) or feeding too much grain in one meal can lead to improper fermentation in the gut or an obstruction, causing colic. Horses should not be fed more than 0.5% of their body weight in grain in a single meal. Horses that are athletic performers and need to eat concentrates will need to be fed several times a day.
- Horses, being herbivores, need fiber to ensure proper gut function, so a diet lacking enough fiber will lead to colic. Horses should consume daily at least 1% of their body weight in forage to ensure proper intestinal health.
- A diet high in grain will increase fermentation in the gut, which will increase the amount of gas buildup, potentially leading to timpanic colic (too much gas).
- Horses with bad eating habits (bolting, cribbing) are also prone to colic.
- Hay harvested too late, with too many stalks and insufficient leaves, can cause impaction colic.
- Lack of water can also lead to impaction colic. Horses should have access to water at all times and in every season of the year. However, with a "hot" horse (one after heavy exercise), avoid either feeding it or allowing it to drink heavily. It's been suggested that a hot horse will develop colic if it drinks a lot of cold water at once. Always cool down your horse after exercise, which will enable the optimum amount of heat to dissipate and lactic acid to be excreted properly. To cool down a horse after exercise, keep the horse at a walk until its respiration is back to normal.
- Stabled horses and horses that are not able to move freely are at a higher risk of developing colic, in contrast to horses at pasture, which continue to move around and increase their gut motility. These pastured horses also may consume more of the water that helps prevent impaction colic because they are exercising more (walking around) and also because they eat grass, which has a high water content and so passes through the gastrointestinal tract more easily. And finally, by moving around, the gas buildup in the intestinal tract will be more likely to be passed.

Clinical Signs

A horse with mild colic will paw the ground with its front feet, be restless, lie down, roll frequently, and look at its abdomen. It may also kick at its abdomen in an attempt to relieve the pain. A horse with more severe colic will roll and may become cast. Horses with very severe colic will throw themselves to the ground and roll violently. These horses can be dangerous to work with until properly sedated. Pulse and respiratory rates will be higher than normal. The absence of abdominal sounds is characteristic of a horse with colic. Mucosas (eye conjunctiva, vulva, gum, etc.) can be very pale or may be dark red, depending on the cause of colic.

Diagnosis

Call a veterinarian as soon as you note signs of colic in your horse. In some cases, the time between onset of signs and beginning of treatment is lifesaving.

As you wait for your veterinarian to arrive, here are some things you should observe so you will be able to relay the information to the vet:

- General condition and behavior (calm, restless, alert, dull, apathetic)
- Frequency of abdominal pain (none, intermittent, or continuous)
- Frequency of abdominal sounds (normal, increased, decreased, or absent)
- Abdominal size (normal, reduced, distended)
- Nature of peripheral pulse (normal or weak)
- The length of time it takes for gums to return to normal color after pressure is applied (capillary refill time)
- Other signs (sweating, wounds, etc.)
- Water intake
- Presence of and consistency and regularity of feces

It is very important that you learn how to assess your horse's vital signs so your veterinarian arrives at your barn with the scenario already in his/her mind. For more information on assessing vital signs, refer to the Cooperative Extension Service publication *Evaluating the Health of Your Horse* (ID-179).

Treatment

Traditionally, a horse with colic is walked to help relieve anxiety and to prevent the rolling that can lead to intestinal twisting. Walking may also help to restore normal activity in the intestine and allow the horse to defecate and/or relieve the buildup of pressure in the intestines. If 30 minutes pass and the symptoms are either unrelenting or increasing in severity, a veterinarian's assistance is necessary.

After a thorough examination, your veterinarian can suggest a treatment depending on the type of colic. Cases of colic can be medical or surgical. For example, mild, intermittent colic can usually be treated conservatively (medically), while a horse with a twisted intestine (torsion) requires surgery.

Treatment by a veterinarian may involve using the following:

- Analgesics (pain relievers) administered in mineral oil via gastric tube to lubricate the intestinal tract and act as a laxative to help fecal matter move through it
- Rectal palpation
- Administration of intravenous fluids

After initial treatment, continue to evaluate the horse closely. Passing of feces and gas is a good sign. If the horse does not show improvement after two hours, your veterinarian will be able to determine if the colic is a medical or surgical case and will also help you decide how to proceed. Colic surgery is extremely expensive, and many times owners cannot afford it. In such cases, humane euthanasia may be the only solution for the suffering horse.

Control

Preventing colic involves proper management. Avoiding situations which predispose the horse to colic will undoubtedly reduce its incidence.

Here are some practical steps to take:

- Do not overgraze pastures and paddocks.
- Provide a clean, adequate, and abundant source of fresh water daily.
- Feed on a regular daily schedule.
- In the winter, when horses tend to drink less water, you can increase their water intake by feeding them a mash. Just add warm water to their grain. Pay attention, because some horses will not eat mash. Ideally a horse will finish its mash meal within one hour, which will prevent fermentation in the feed bucket. If it doesn't finish eating within the hour, you may need to adjust the amount of water or grain.
- Do not allow your horses to have access to your feed room or feed tub.
- Do not feed moldy or spoiled grain or hay.
- Provide adequate forage in the diet.
- Keep stalls and paddock areas free of foreign objects that the horse might ingest.
- Work with veterinarian to establish a good intestinal parasite control program.
- Provide regular turnouts and exercise for your horses.

In general, good horse management will decrease the incidence of colic in your horse. If colic signs do appear, contact your veterinarian.

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