

The horse's dreaded five letter word: COLIC

Perhaps one of the most feared emergencies for the horse owner is colic. It can vary from mild to very severe and can manifest quickly. Although this condition can be fatal, most cases are manageable and understanding how to recognize and deal with a colicking horse will help to ease nerves.

Colic is a broad term for pain in the abdomen. Many people will think immediately of a horse rolling on the ground with a 'twisted gut' but the condition has many degradations. Colic can be very mild and for 75% of cases, this is true. To help describe the differences in severity, it will help to know some of the signs of colic. The more subtle signs include yawning repeatedly, curling the upper lip repeatedly (Flehman response), stretching out the neck repeatedly, depressed, loss of appetite or refusing treats and standing off from the herd when pastured. These signs are not necessarily specific for colic, but they are often the early signs of mild abdominal discomfort. As the signs progress, the pain will result in some more of the classical signs such as pawing, shifting weight between legs, kicking at the belly with the hind legs, sweating, looking back at the flanks and laying down or restless behavior. With these signs, the discomfort becomes more obvious and this indicates that abdominal pain is becoming more intense. When pain progresses beyond this level, the signs usually become more violent such as rolling repeatedly, bloating and distention of the abdomen, depression, panting, sweating excessively, quivering of the muscles in the shoulder or hindend and audible gasping or moaning may be present. One of the signs that causes particular confusion is the classical sign of 'stretching out to pee' in geldings. The stretching of the abdomen is not usually actually due to the need to urinate but is a pain response associated with the abdomen in general.



The cause of colic is a very commonly postulated question. In some cases we know of a certain change in feed/diet or saw the horse eat his halter or water bucket (not kidding!). In most cases, an exact cause is not going to be immediately determined. Colic can result from many factors. Changes in water and diet can certainly impact the intestinal tract and result in changes in the function and environment of the abdominal contents. The physiology behind the development of colic in these cases can be at least partially explained by considering the natural balance of the normal bacteria that live in the small and large intestine in the horse. Each horse has a slightly different population or balance of 'good' and 'bad' bacteria in the intestine. The good bacteria produce by-products that are helpful to the horse and aid digestion. The bad bacteria may produce toxins or gases that can be harmful to the horse's intestine.

These bacteria come from the environment that the horse is exposed. Whatever the horse takes into himself from his feed and water to the soil and trees and native grasses will determine the type of bacteria that populate the bowel. When the feed or water changes rapidly, there is opportunity for disruption of the bacterial balance in the intestine. This can result in an increase in gasses or toxins from the bacteria and subsequently disruption of the intestine.

Another cause of disruption is changes in weather or barometric pressure. Some horses are particularly prone to colic signs during changes in weather patterns. This change is due to external barometric pressure changing quicker than the pressure of the gases in the horse's bowel. The result is excess gas present inside the bowel that cannot be moved out quickly enough. As the gas builds up, the colon stops moving and a colic results.

Dehydration can also cause problems for the abdomen. Hydration is necessary for maintaining good blood flow and nerve function in the bowel as well as generally hydrating the feed/ingesta that is moving through the intestine. When dehydration occurs, these functions become compromised and colic can result.

Parasites can cause damage to the intestine lining and blood supply system in the horse. This damage will result in colic. In addition, if parasites are not controlled, they can physically become so numerous that they block the intestinal tract completely. This is usually seen in foals but can occur in untreated adults as well.

The final and most frustrating category of colic is random chance events. Unfortunately, the design of the horse's intestinal tract allows for a lot of mobility of the anatomy. The colon is a 24 foot horse shoe shaped tube that wraps back and forth in the abdomen and there are over 70 feet of small intestine. Small areas near the liver, spleen and stomach can entrap bowel. The small and large intestine can twist on its axis and result in strangulation of the intestine. Fatty tumors can wrap around the small or large intestine.

These are just a handful of the nearly 200 different manifestations of colic. Conscientious management practices and keeping an eye on your horse for the early signs of colic will help to mitigate the progression of severe colic but it will remain a scourge for horses.

There are a few conditions in horses that may appear to be colic but actually are unrelated. Laminitis of the feet can result in signs that may appear to be colic. The horse can get sweaty and resist moving around and may look at their sides. Shipping fever (pleuropneumonia) can look very similar to abdominal pain. Horse will become depressed, restless, look at their sides, paw, grunt or groan and have an increase respiration rate. Pregnancy can cause discomfort and although the sign of pregnancy is usually obvious, sometimes, horse can surprise you. Horses that tie up (muscle inflammation) can show signs such as pawing, looking at their flank, depressed, yawning, shifting weight. Urinary obstructions can present with all the signs of colic including the more violent signs of rolling and muscle twitching. The last non-abdominal colic condition that we as vets must consider is testicular torsions in stallions. Twisting of the testicle can occur which results in severe colic signs and must be differentiated during our exam.

The time to call the vet is anytime that you begin to notice the signs of colic. A mild colic can progress rapidly into a severe colic and determining the cause as early as possible will increase the chances of a

successful outcome. When the vet arrives and performs their exam, they will be going over the horse from head to toe. Assessment of heart rate, respiration rate, temperature and abdominal gut sounds will all be part of the basic assessment.

Here are some of the general guidelines that the vet will discuss with you following the exam

- Heart rate
 - Normal 24-40 beats per minute
 - >50bpm – moderate pain level, usually controllable
 - >60bpm – moderate to severe pain, often indication of surgical problem
 - >70bpm – severe pain, indication of fluid buildup within the stomach
 - >80bpm – severe pain, body is developing severe shock and blood flow is being compromised
 - >100bpm – extreme pain, shock, decompensation of the heart and organs imminent, toxins within the blood stream

As the vet continues to check the other systems of the horse (gum color, skin tent, blood supply/pulse in the feet), they will also prepare to perform a rectal exam and/or ultrasound of the abdomen. The vet uses this information to determine if there is intestine in the wrong place or twisted the wrong direction. The horse may need to be sedated to perform this task. In some cases, the vet may want to pass a stomach tube down the horse's nose and into the stomach. This is done for several reasons, first, a horse cannot vomit so if there is fluid or material building up in their stomach, they cannot relieve that pressure naturally. The tube allows for any excessive fluid to get out and avoid rupturing the stomach internally. Second, the tube allows the vet to administer water, oil, electrolytes etc. as needed for each particular type of colic that is suspected. Once the vet has completed the exam, they will want to discuss the findings and prepare the options for treatment with you.

Treatment of colic can be as quick as an assessment and administering a pain killer or it could be a frantic rush to find a trailer and get the horse to an equine hospital for further monitoring or even surgery. The basic treatment for colic in almost all cases is for the vet to administer a pain killer called Banamine (Flunixin meglumine – actual drug name). This medication works to decrease inflammation and help block the pain coming from the abdominal organs. Sometimes, just breaking the pain cycle within the abdomen will allow the intestine to relax and resume normal function. Banamine should begin working within 15-20 minutes of administration intravenously. Although it is often administered intramuscularly by horse owners, it should not be given in this fashion due to a terrible complication that can occur resulting in the area of the muscle injected dying and sloughing off the horse. This complication is fairly common with banamine administered intramuscularly and is due to a bacterial infection that can be activated within the muscle by the injection. The complication can be fatal and will result in a nasty wound in the area injected. Banamine, administered appropriately, should have effects that last 6-12 hours. If the horse continues to be painful or becomes painful before six hours following the injection, re-evaluation of the colic is necessary. About 75% of colic cases will respond to banamine with or without administration of water/oil/electrolytes via nasogastric tube.

In those horses that do not respond to banamine or the discomfort returns before six hours following banamine, the level of severity of the condition is increased and requires further attention. This group of horses represents only about 25% of all colic cases. When a horse continues to have discomfort and

pain, a decision is necessary of whether to pursue further advanced treatment. This often requires referral to an equine hospital for management and, if necessary, surgery to correct the internal problem. This can be a very emotional time and the progression of the condition can leave very little time to make decisions. I strongly urge all horse owners to sit down with those involved in the decision-making process for your horse and discuss the potential of your horse needing surgery or advanced care in an emergency. Part of that discussion should involve the financial aspect of these conditions. Colic surgery can be very expensive and even hospitalization with advanced monitoring can be a financial burden. A contingency of \$5000 will cover the majority expenses of major medical and surgical emergencies. Insurance for major medical situations is available and should be discussed or as many clients do, set aside a savings account for your horse in the event of a major medical issue and contribute to it monthly. In the event that the account is not needed during the long life of your horse, the fund will be available to help find your next horse or look after the expenses of laying your companion to rest. Difficult subjects to deal with, however, having a plan will make the decisions easier at the pivotal points when time is of the essence.

If your horse does need surgery, you will be referred to a veterinarian that specializes in surgery. This will be a veterinarian who has done 3-4 years of additional training in surgery beyond their Doctor of Veterinary Medicine (DVM) and will be designated by the credentials of being a Diplomate of the American College of Veterinary Surgeons (DACVS). These surgeons are specially trained to perform all manner of surgery in horses and have the expertise to give your horse the best odds of success regardless of type of surgery needed. The surgeon will discuss the risks associated with colic surgery and discuss the outcomes that can be expected given the type of colic that is suspected. With that information, you will be able to make a decision regarding the best option for you and your horse. As a general rule, issues of the large colon tend to have a better success rate than issues of the small intestine. Luckily, most horses affected with colic involve the large colon. If surgery is performed, the horse will likely need to stay in hospital for 5-10 days following surgery. The surgeon will monitor for complications and when you take your horse home, there is usually a 3 month period of healing that must occur before you can begin exercise again with your horse. There is always concern about recurrence of colic in horses following surgery, however, the risk of this is case dependent. Many horses with large colon related problems will not experience any recurrence of colic following surgery, but this is dependent on the type of surgery performed and your surgeon will be able to advise you the specific risks depending on your horse's situation.

Not all types of severe colic require surgery and some cases may be the result of severe medical issues in the intestine such as enteritis or colitis. These are inflammatory conditions of the bowel that can be very severe and require advanced management. Bottomline, if your horse develops severe colic and a decision must be made to move the horse to the next level of treatment, having the discussion prior to the stress of the situation will make your decision more clear and most in line with the best long term outcome for the horse.

Colic is a massive subject and it takes textbooks to cover the entirety of the condition but hopefully this provides some insight into the condition and will assist in preparing you with making difficult decisions when faced with an event such as colic.