

Colic Surgery Guide

What happens when your horse needs colic surgery? A vet's advice prepares you for this serious scenario.

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While colic episodes are cause for concern, most cases can be managed with non-surgical veterinary treatment: a shot for pain, a dose of mineral oil, a rectal exam, and the horse usually gets better. But then there are the other cases. Those horses that don't get better with one or two or three shots for pain relief, that keep on lying down, pawing, trying to roll, kicking at their belly, looking at their sides, et cetera. This is the dreaded 10 percent that require surgery.

Classic Colic

The large intestine of the horse is designed to digest forage. It's composed of a very large cecum, which can be compared to our appendix, and a large and small colon. Gas or spasmodic colics occur when the cecum and large colon become distended with gas. The gas distention overstretches the intestinal wall, making the intestine very painful and unable to contract in a nice wave-like motion that moves gas along and out. Instead the intestine spasms, allowing gas to stay and creating a cycle of more and more distention. In these cases horses will often paw violently, pace, lie down and kick at their bellies. Walking will sometimes help get the intestines moving again and push the gas out; if not, then Banamine and Xylazine for pain relief, along with rectal massage and nasogastric tubing (a tube passed up the nose and down into the stomach, which allows the veterinarian to administer mineral oil with a stomach pump) usually fixes these colics.

Impaction colic is similar to gas colic: The intestine becomes distended and stops moving properly. But instead of gas, food material fills the intestine and gets stuck (impacted). These types of colics can be very painful but often the horse is not as violent. A rectal exam by a veterinarian, which may include pulling out manure, helps provide some relief. Also, a nasogastric tubing with mineral oil helps soften and lubricate the manure so it can pass.

Spotting Surgical Colic

Surgical colics are much different. In most cases there is an immediate difference in the horse's eye that most surgeons recognize immediately. These horses don't respond to pain medications, and the nasogastric tubing and rectal exam provide little, if any, relief. The pain is constant and can be severe or subdued, but not completely relieved with painkillers. In very obvious cases, the horses are throwing themselves down with pain, rolling and won't get up, even with drugs on board. The onset of clinical signs is usually rapid, and the pain typically increases quickly. Getting into the trailer and to the nearest equine hospital, before the intestines become too damaged and the horse becomes too overcome with pain, is critical.

The causes of surgical colics vary, but the common denominator is a blockage of the intestines that can't resolve without opening up the horse's abdomen and fixing the problem.

A Colic Surgery Candidate

Surgical colics have very high heart rates, often above 60 beats per minute and can be over a 100 bpm. The respiration rate is usually elevated, and fever (101.5 degrees F and above) is sometimes present. These horses usually show signs of pain, such as pawing or trying to lie down. They typically have no gut sounds, and their gums are an abnormal color. The gums can range from cyanotic to bright red. Cyanosis is a grayish-blue color that indicates decreased oxygen supply. Bright red gums indicate toxins in the blood that are causing the blood to clot and slug in the small capillaries. A variant of red gums is a toxin line—a red line in the gums over the teeth—that is usually the first sign of toxin absorption. **Surgical Colics**

Colon torsion or "twisted gut" is one of the most common, and most dramatic, types of surgical colics. The large colon is separated into sections folded into left and right, upper and lower quadrants. The left quadrants are not attached to the body wall; these parts of the large colon are free moving in the abdomen and can twist 180 to 360 degrees causing a complete blockage. Not only is gas and food material trapped inside the twisted gut, but blood supply is cut off, causing damage or death to the intestine. As the gut dies, toxins are released into the body, causing severe illness or even death. For some horses, pain medication helps keep them quiet for approximately an hour. But some horses are so painful that the drugs seem to help very little.

Strangulating lipomas and epiploic foramen entrapment are situations where blood supply to the small intestine is

completely cut off and the intestine dies. When a lipoma (fatty tumor) develops, it is connected to the intestines by a thin strand of tissue. This strand of tissue acts like a string and the lipoma acts like a weight, wrapping around a section of small intestine then tightening and cutting off the intestine completely.

Epiploic foramen entrapments occur when a section of small intestine falls into the epiploic foramen—a triangular window created by the body wall, the liver and the vena cava (large abdominal vein carrying blood back to the heart). The trapped small intestine gets irritated from the partial obstruction and swells, getting heavier and pulling more intestine through the window, eventually causing complete strangulation of the small intestine.

Both of these types of colic are very painful; the intestines die from lack of blood supply and toxins are released into the body. Horses with these types of colic are very sick. Often it's difficult to get them to stay up, and they are minimally responsive to pain medications.

Enteroliths, commonly called intestinal stones, can cause colic and need to be removed surgically. These stones develop inside the large intestine and can get so big that they either irritate the colon or get stuck within the colon, potentially cutting off circulation to the intestine. Without proper circulation, the area of intestine around the stone dies and then ruptures, releasing intestinal contents into the abdomen and a massive amount of toxins into the body, which causes death.

The above are by far the most dramatic cases, but there are also mild to moderate displacements of the large colon, adhesions, scar tissue constrictions, parasite migration, blood clots and more, that can create a surgical colic.

Surgical Status

Time is of the essence in a situation where intestines are dying, so the sooner the horse gets to surgery, the better his chances of survival. A vet's rule of thumb is that if a horse has to be medicated more than three times within a one- to two-hour period, he should be sent to a surgical facility for evaluation.

Some horses are so painful on presentation at the hospital that there is no question surgery is needed, but others may have varying degrees of symptoms so more diagnostic tests are performed.

The two most widely used tests done at the hospital, invaluable for determining the surgical status of a colic, are the abdominal tap and the abdominal ultrasound. The abdominal tap involves obtaining a sample of peritoneal fluid (the fluid that surrounds the abdominal organs) to check for elevated protein and white cells. Normally peritoneal fluid is a clear amber color, but in very sick horses it can become cloudy, red-tinged, or in the case of a ruptured intestine, the fluid appears green with food particles within.

Abdominal ultrasound allows the surgeon to evaluate the small and large intestines. The ultrasound can also help determine the motility of the gut by actually looking at the intestines move.

If an intestinal stone is suspected, then abdominal radiographs (X-rays of the belly) are done. Since the possibility of rupture is always present, if an intestinal stone is seen on abdominal radiographs, surgery is always warranted, even if the horse is pain free.

The call to go to surgery is usually determined quickly once all of the above factors are put together. For the horses that are not as obvious, often there is a period of monitoring at the hospital to see if the clinical signs resolve or worsen. If a horse doesn't appear painful but has abnormal ultrasound or abdominal tap findings, surgery is usually recommended in order to help save the intestine from further damage. There are some horses that may not be good surgical candidates and are better served by humane euthanasia, such as those that have suffered for days and have consequently experienced significant damage. Horses severely compromised by diseases such as laminitis, liver disease, kidney disease or Cushing's disease, might not be surgical candidates either. But even Cushing's horses can do well if they are somewhat stable before surgery.

On the Table

At many of the hospitals there are observation rooms where you can watch your horse's surgery. The surgery itself involves fully anesthetizing the horse, getting him onto a surgery table, then opening up the abdomen. Once the horse is completely anesthetized and laid down, a tracheal tube is passed through the mouth and into the lungs to get the horse on gas anesthesia and oxygen. The horse is then moved onto the table by shackling the lower legs and lifting him with a winch. The horse is on his back and is secured to the table by the shackles. His belly is shaved and scrubbed to meet surgical standards. The surgeons prepare themselves by scrubbing their hands and dressing in full surgical gowns and gloves. Colic surgery in the horse is treated with the same standards as human surgery.

These horses can be very sick, and the anesthesia can be very dangerous for them. Some horses stop breathing or have other complications. Special equipment is used to constantly monitor blood pressure, heart rates, respiration rates and blood gas levels, so appropriate measures can be taken to treat problems as they arise. If the blood pressure drops too low, long-term damage to the kidneys and brain, or even death, can occur.

The surgery itself consists initially of making an incision into the abdomen down the midline of the horse's belly. The surgeon then reaches in to find the problem: Twisted large left quadrants of the colon are untwisted; a displaced large colon is put back into the right spot; in the case of problems with the small intestine, the dead or damaged gut is cut out and the good intestine reconnected back together; intestinal stones are removed or severe impactions extracted. During surgery the large left quadrants of the colon are usually pulled out of the abdomen and emptied by making a small incision at the pelvic flexure (a section of the large intestine), and the contents dumped into a bucket.

During the operation, the surgeon can estimate how the horse will do afterward depending on the problem and the state of the intestines. Sometimes the damage is so extensive that the surgeon may recommend euthanasia while the horse is still on the table or will warn the owners that the post-surgery prognosis is not good. Other times the surgeon will see minimal damage, and the prognosis is favorable.

If colic is caught early, surgery can be performed in time to save the intestines and minimize complications. But complications can occur and may start as early as recovery. After surgery the horse is allowed to wake up, but is encouraged to stay down until he is more coherent and stable to support standing. Very rarely a horse will get up too soon and hurt himself falling, sometimes even breaking bones. Other times the surgery fails to resolve the pain, and the horse begins to colic again. Sometimes this pain can be resolved with medical management, sometimes not and another surgery is needed.

Recovery

The first 72 hours after surgery are the most critical. This is when the intestines are trying to reorganize themselves from being manipulated, cut open, et cetera. As a result the intestines sometimes stop moving, which is very painful for the horse. Also, if the circulation to the intestines was cut off for too long, the lining of the intestines sometimes reacts by becoming inflamed, or dies, resulting in severe diarrhea. If the horse had intestine cut out, the site of reattachment may fail, causing either another blockage or rupture at the site. After surgery the horse's immune system is compromised from stress, and infection is a concern. Laminitis, although rare, may also occur.

After the first 72 hours, other long-term complications can set in. Scar tissue formation, adhesions and intestinal constriction may decrease the motility of the intestines and cause more colics. Persistent diarrhea from salmonella infections, microflora imbalance or inflammation of the lining of the colon, is a possibility. Horses may become hard keepers and require additional supplements to maintain. Hernias or infections along the incision line on the belly are also possible.

With the improved surgical techniques and experienced surgeons we have today, a great majority of horses get to go home after colic surgery and make a full recovery. Typically horses need 90 days to recover after colic surgery. The first 30 days are stall rest and hand walking, which allow the intestines and the incision line to strengthen up. The following 30 days are light turnouts in small paddocks or sun pens. The final 30 days are light exercise under saddle, mostly walking or easy trotting.

Difficult Decisions

Once a horse has had colic surgery, the chances of colicking again vary and depend mostly on the type of colic surgery and the extent of damage that occurred. Colon torsion and small intestinal resections (sections cut out and reconnected) have the highest rate of colic recurrence requiring surgery. Some horses appear more prone to colon torsion and displacements; for these horses the colon is actually tacked down to the abdominal wall. In the case of small intestinal resections, the area of reattachment can be an area of food blockage due to poor flow through the connection site. Typically these horses tend to colic again one to two years after surgery. Horses that have intestinal stones removed can form new stones; this regrowth takes years, usually four to seven.

When in the moment, trying to decide to do surgery can be very difficult but should be decided as soon as possible. Survival is based on the speed of getting the horse to the surgery table and who's doing the surgery. Waiting to see if the horse gets better increases the risk of the surgery failing. Often financial constraints limit our ability to give this option to our horses. For this reason, I strongly recommend all horses getting surgical/medical insurance. This allows freedom of judgement based on medical facts only.



For more information on colic:

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