

Colic, and Colic Surgery

By Kirk Heisterkamp, DVM
River Basin Equine Veterinary Services
"Colic"

Nothing causes as much fear and anxiety to a horse owner as this condition. The leading cause of death in horses is still considered by most veterinarians to be colic. Colic defined means abdominal pain. It is most commonly associated with the gastrointestinal (GI) tract, but can also be associated with the urinary and reproductive systems. In this article we will concentrate on GI tract causes of colic.

The list of GI problems that cause colic or abdominal pain in horses is extensive; there are over 25 separate conditions. The most surgically concerning causes of colic are the ones where GI anatomical abnormalities occur and blood supply to the affected segments of bowel is shut off. These conditions would be grouped under the common terminology of "twisted gut". They are most successfully treated with surgery and the horse's survival depends greatly on early recognition and surgical correction.

Horses with colic exhibit a variety of clinical signs which include: unwillingness to eat, depression, lethargy, restlessness, aimless pacing, pawing, sweating, rapid breathing, frequently/suddenly lying down, frequent attempts to stretch out and urinate, raising the front lip, looking at the abdomen, kicking at the abdomen, rolling, and any combination of the above. The clinical signs exhibited vary with the portion of the GI tract involved, duration of the problem, and the horse's pain tolerance. No one clinical sign or combination of signs is specific for a given cause of colic.

Pain tolerance is an important item to reiterate. Some horses have a tremendous tolerance for pain and will not exhibit outward clinical signs, such as restlessness, rolling and pawing. A "tough" pain tolerant horse can have a serious, life threatening GI condition, and the only outward signs will be unwillingness to eat, depression and lethargy. This simple fact alone warrants veterinary examination of any "sick" horse.

A recent study of horses undergoing colic surgery reported that horses which were depressed and not outwardly painful had a lower survival rate as compared to horses actively painful prior to surgery. Any horse that does not quickly return to its normal attitude, appetite and behavior following treatment for colic signs should be a concern for reevaluation. Fortunately, most horses with colic respond to medical therapy and do not become surgical candidates.

Determining when a horse needs colic surgery is not always a straightforward process. Several factors need to be initially evaluated and then reevaluated over the course of treatment.

Factors which play a role in making a decision for colic surgery are as follows:

- **Medical and recent history** - Duration of colic signs, previous illness or surgery, current medications, deworming schedule, feeds / feeding schedule and response to initial treatment / medications. Repeated need for pain medications



Gina is holding a very large mass termed a *strangulating lipoma*. Lipomas are benign fatty masses found in older horse abdomens which causes colic when their stalk or pedicle becomes wrapped around a segment of bowel.

is the hallmark indication for considering surgery.

- **Physical exam findings** - Heart rate, respiratory rate, body temperature, mucous membrane (gum) color / moistness and capillary refill time, skin turgor ("tenting"), GI sounds heard with stethoscope, gas distention on percussion and auscultation with stethoscope. These are the basic physical exam parameters, frequent reevaluation over the course of treatment is much more valuable than one single exam when accessing the need for surgery.
- **Rectal palpation** - Rectal mucosa moisture, character of manure found in rectum, and systematic palpation of the abdominal anatomy can provide valuable information with regards to the cause of the abdominal pain. Just like a physical exam, repeated rectal examination provides more information than a single exam. Rectal examination should be performed under controlled circumstances to avoid injury to the horse and examiner.
- **Nasogastric intubation** - Passing a stomach tube is a valuable diagnostic and therapeutic procedure. Due to the anatomy of a horse, colic can lead to fluid accumulation in the stomach, and if not addressed can lead to gastric rupture and death. Horses with large amounts of stomach fluid distention generally have rapid and shallow respiratory rates. If no stomach fluid accumulation is found, administration of water, mineral oil, or other laxatives is a common treatment procedure.
- **Blood work (Clinical Pathology)** - Routine blood work is tremendously helpful in evaluating horses with colic for evidence of dehydration, shock, infectious conditions, electrolyte imbalances, or liver / kidney dysfunction.
 - Intravenous (I.V.) fluid therapy is an important part of medical treatment for many colicky horses, especially those with feed impactions and evidence of dehydration. I.V. fluid therapy, in many cases, is also needed prior to surgery to treat systemic shock and

minimizes the risk of anesthesia. Repeated blood work is an important part of the fluid therapy plan when treating a colicky horse medically, prior to surgery and after surgery.

- **Abdominocentesis ("Belly Tap")** - The abdominal cavity normally contains a small amount of fluid called peritoneal fluid, which lubricates the surface of abdominal organs. A "belly tap" involves collecting a sample of this fluid via insertion of a needle into the bottom of a horse's abdomen. If a portion of the GI tract becomes unhealthy, it will begin to leak protein and cells. Therefore a sample of peritoneal fluid obtained from a "belly tap" with elevated protein or cells, can indicate a more pressing need for colic surgery and abdominal exploration.
- **Radiographs (X-rays)** - Radiographic examination of colic patients can provide useful diagnostic information, but is limited to use in foals, miniature horses, and small ponies.
- **Ultrasound** - Another diagnostic tool used to evaluate the abdomen. Like x-rays, it is most informative in smaller patients where a larger portion of the abdominal contents can be visualized.

In addition to the above evaluation factors, veterinarians use their experience and intuition in making medical or surgical treatment recommendations. Constant observation and frequent reevaluation at a veterinary hospital / surgical facility is often the most valuable process in insuring a horse's recovery from an episode of colic.

There appears to be a misconception among many horse owners that colic surgery is rarely successful in saving a horse's life. This author's opinion is that colic surgery is much more successful currently because veterinarians are quicker to refer, institute aggressive medical therapy, and perform surgery sooner than in years past. Advances in anesthesia, surgical technique, and pre- and post-operative care have also added to the survival rates of horses undergoing colic surgery.

In conclusion, most experienced equine surgeons would agree that it is far better to perform surgery on the occasional horse and find abdominal problems amenable to medical therapy alone, than to lose a horse because the decision for surgery was made too late.