

Impaction Colic and Hydration
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Impaction Colic

Colic is one of the most dreaded conditions horse owners and trainers encounter with their horses. The term “colic,” however, is vague and refers only to abdominal pain without identifying the cause of the disorder. Although the gastrointestinal tract (GIT) is often the cause of abdominal pain, other abnormalities may also cause a horse to exhibit signs of colic. Gastrointestinal causes of colic include blockage with feed material or a foreign body, inflammation, or displacement or volvulus of a portion of the GIT. To understand the causes of colic in the horse, one should first have a basic understanding of the horse’s GIT.

Anatomy of the Gastrointestinal Tract

The horse’s gastrointestinal tract (GIT) follows a long path. A food bolus initially enters the horse’s mouth and travels down the esophagus and through the cardiac sphincter into the stomach. Because the horse’s esophagus does not have reverse peristalsis, food only travels in one direction and horses cannot vomit. Horses have a monogastric stomach, meaning they have only one compartment to their stomach unlike other grazing species such as the cow. The stomach is divided into two parts, the squamous and non-squamous portions. The division between these two areas is called the margo plicatus.

Food leaves the stomach to enter the small intestine through the pyloric sphincter. The first portion of the small intestine is the duodenum which is only a few feet in length. The next portion of the small intestine is the jejunum which can exceed lengths of 60 feet in an adult

horse. The ileum is the last segment of the small intestine and is also only a few feet in length. After the small intestine, food enters the large intestine.

The first portion of the large intestine is the cecum, a blind ended pouch responsible for much of the fermentation of feed material in the horse. After the cecum, feed enters the colon. Although shorter in length than the small intestine, the colon has several segments and undergoes abrupt changes in direction and decreasing lumen diameter, making it a common site for impactions. The first segment of the large colon is the right ventral colon, followed by the sternal flexure, left ventral colon, pelvic flexure, left dorsal colon, right dorsal colon, transverse colon, and descending or small colon.

Pelvic Flexure Impaction

An impaction is blockage of the intestine with feed stuff or other material. Although impactions can occur anywhere throughout the intestine, some sites are more common. The pelvic flexure portion of the large intestine is a common site of impaction in the horse because of the decreasing lumen diameter between the left ventral colon and pelvic flexure. The level of pain displayed by a horse with a pelvic flexure impaction varies with the severity of the impaction and the horse's individual pain tolerance. Some horses may exhibit only mild signs such as lethargy, while other horses may roll, kick at their abdomen, and have an elevated heart rate. Although manure production is typically decreased from normal, horses may still pass small amounts of manure with a pelvic flexure impaction. The diagnosis is based on rectal palpation by the veterinarian of a firm mass in the left side of the abdomen.

Initial treatment of pelvic flexure impactions usually includes oral administration of water and possibly mineral oil. The veterinarian passes a nasogastric tube into the stomach to facilitate administration. Before administering fluid, the veterinarian checks for reflux (increased volume of fluid in the stomach) to prevent adding fluid to an already distended stomach. The goal of water and mineral oil is to increase the fluid content and soften the impacted feed material. Other medications sometimes given orally include dioctyl sodium sulfosuccinate (DSS) and magnesium salt. Both function to pull water into the GIT with the goal of hydrating and softening the mass. DSS also functions as a surfactant to increase water permeability of the impaction. However, DSS may be irritating to the walls of the GIT and has declined in use in recent years. Pelvic flexure impactions that do not respond to oral fluid therapy may require intravenous (IV) fluid therapy. IV and oral fluid therapy can be combined to provide the best chance of hydrating and moving the impaction through the intestinal tract.

Pelvic flexure impactions that fail to respond to medical therapy can require surgery. Reasons for taking a pelvic flexure impaction to surgery include high levels of pain in the horse and concern over additional GI lesions or failure to respond to medical therapy.

Cecal impaction

The cecum is also a common site for impactions. Since the cecum is a blind ended pouch, feed material enters and exits through the same orifice. This lumen is only several inches in diameter making it a prime area for impaction. Alterations in cecal motility may also contribute to impactions. Cecal impaction is based on rectal palpation by your veterinarian of a

firm mass in the right area of the abdomen. Ultrasound examination may also demonstrate ingesta in the cecum. Fluid or gas may also be present in the cecum adjacent to the impaction.

Initial therapy is similar to a pelvic flexure impaction with oral and intravenous fluids. However, increasing levels of cecal distention can lead to rupture, so surgical intervention may be required sooner than with impactions at other sites. Unfortunately, changes in cecal motility may persist after surgery and horses are at risk for repeat impactions or distention from gas or fluid.

Small colon impaction

The small colon is another site of feed or foreign body impaction. Diagnosis can be based on rectal palpation of a firm mass in the ventral portion of the abdomen. However, often the impaction cannot be palpated and a presumptive diagnosis is made based on clinical signs. Horses with small colon impactions may have a fever, low white blood cell count, and other clinical signs suggestive of endotoxemia. Salmonellosis has been associated with small colon impactions.

As with other impactions, treatment includes intravenous and oral fluids. Horses exhibiting signs of endotoxemia may include additional therapy of antimicrobials, anti-inflammatory medications, and anti-endotoxic medications. Horses with small colon impactions may require surgical intervention, particularly if the impaction can not be palpated via rectal palpation and the horse continues to display signs of colic.

Stomach impaction

The stomach is not a common site of impaction in the horse. Typical causes include feeding course or poor quality feed material or ingestion of foreign bodies such as persimmon seeds. Obstruction at the pylorus may also contribute to gastric impactions. Aged horses or horses with dental abnormalities may not chew hay adequately contributing to gastric impactions. They may also occur secondary to lesions elsewhere in the GIT if the horse continues to eat, but feed cannot pass through the intestinal tract.

The presence of feed material in the nares and difficulty passing a nasogastric tube in to the stomach are suggestive of a gastric impaction. Ultrasound of solid content in the stomach or endoscopic visualization of impacted feed material confirms diagnosis.

The goal of treatment is removal of the feedstuff through a nasogastric tube by repeat lavages. Also, any primary lesion in other portions of the GIT must be treated.

Prevention of impactions

Management practices to prevent impactions include providing high quality roughage and ample, clean water. Providing warm water in cold weather may encourage some horses to increase water consumption. Adding electrolytes to the horse's water supply may encourage horses to drink more water. However, always provide water without electrolytes at the same time since some horses will refuse to drink the electrolyte water.

Horses should have regular dental examinations with appropriate treatment to avoid dental issues contributing to impactions. Older horses with missing teeth may benefit from replacing hay in their diet with a complete feed formulated for senior horses.

All horses, particularly those prone to repeat impactions, should have yearly examinations by a veterinarian to detect any health or dental issues that may contribute to colic. Also, maintain a close relationship with your veterinarian to formulate a feed and management practice to prevent impactions.