

Close this window to return to IVIS
www.ivis.org

Proceedings of the 16th Italian Association of Equine Veterinarians Congress

Carrara, Italy
January 29-31, 2010



Next SIVE Meeting:

Feb. 4-6, 2011 – Montesilvano, Pescara, Italy

Reprinted in the IVIS website with the permission of the
Italian Association of Equine Veterinarians – SIVE

<http://www.ivis.org>

Chronic colic: diagnosis and treatment

David Freeman

MVB, PhD, Dipl. ACVS, University of Florida, College of Veterinary Medicine, Gainesville, FL 32610, USA



Despite advances in management of acute intestinal lesions in horses, recurrent or chronic types of colic remain a management challenge. Although exploratory surgery has to be considered at some point in many of these cases, surgical treatment of many of these lesions can be difficult.

The distinction between chronic and recurrent colic is difficult and might be meaningless. Chronic colic is usually defined as colic signs observed daily over a period of days or longer. Recurrent colic can be 3 or more episodes of transient colic or of prolonged colic over periods of one month to one year or more. Causes can be the same, the differences being clinical manifestations of pain severity. Both types can be masked by analgesics.

Gastric Ulcers

Gastric ulceration in adult horses can be clinically silent or cause signs similar to those of recurrent colic, such as poor appetite, performance, and body condition, and abdominal pain. The most common site of ulceration in adult horses is the squamous epithelium of the nonglandular mucosa, along the margo plicatus. According to endoscopic studies, prevalence of gastric ulcers in Thoroughbred racehorses in training is approximately 90% and these lesions can fail to heal and even worsen as training and racing continue. Research on the treadmill has demonstrated that increased intra-abdominal pressure during intense exercise in horses causes gastric compression, pushing acidic contents into the upper region of the stomach. This finding could explain why horses in intensive training programs (race training) could be prone to ulcers in this vulnerable site.

Although equine ulcers can heal spontaneously, there is evidence that suppression of gastric acidity permits more rapid repair. Horses secrete hydrochloric acid continuously, and gastric pH is likely to be lowest during periods when horses are not eating and gastric acid is not buffered by breakdown products of food, and in the early morning, from 1:00 am to 9:00 am. The rate at which ulcers heal spontaneously can be reduced by antiulcer therapy (omeprazole) from approximately 28 days, and even longer, although clinical improvement might be evident earlier. Therefore, antiulcer drugs might be required for several days to weeks, and some might need to be given frequently per day, so that treatment can be expensive and difficult. Important practical issues in treatment of gastric ulcers are the high cost of treatment and identification of ulcers that cause a clinical problem.

Cecal Impaction

Cecal impaction typically presents as an acute disease, but can cause recurrent colic. It occurs as two types. In one, a dehydrated mass fills the cecum and causes moderate distention, but gas or fluid can pass into the colon, producing scant soft feces. The second type is cecal dysfunction or cecal stasis, in which the cecum is markedly distended with fluid contents. The dehydrated impaction should be treated medically if possible, whereas surgery is often needed for cecal dysfunction. The prognosis for surgical treatment is good, but recurrence can be successfully prevented by a complete ileocolostomy. Unfortunately, there are no hard and fast guidelines for indications for surgery, and most cases should be treated surgically if response to medical treatment is

not satisfactory. The most devastating consequence of delayed surgery is cecal rupture.

Enteroliths

Enteroliths form as rocks around a nidus (pebble, stone, metal object, rope, cloth, other material). Alfalfa in diet has been implicated as creating a favorable environment for enterolith formation. Signs are similar to those of impaction, but surgery is required for those large enough to cause clinical signs. This disease has a strong geographic distribution, and is more common in California and less so in the Midwest, but is seen in all parts of the US. Signs of recurrent mild to moderate colic are not uncommon presentations. Radiographic diagnosis can be helpful and surgery is the obvious treatment of choice.

Nephrosplenic Ligament Entrapment

Horses with large colon trapped over the nephrosplenic or renosplenic ligament can have pain of variable intensity and most present as emergencies with acute colic. However, it is not unusual for horses that are confirmed to have this disease at surgery to have a history of recurrent colic and even behavioral problems (bucking, aversion behaviour) that are attributed to recurrent displacement. However, this is hard to prove. It may be possible to palpate the colon as it passes over the ligament, immediately lateral to the caudal pole of the left kidney and ultrasound examination can be helpful. Treatment by “wait and see” approach, phenylephrine injection and exercise, rolling, or surgery are successful, depending on severity. Many horses require laparoscopic nephrosplenic space ablation, because they are prone to recurrent bouts.

Right Dorsal Displacement of the Large Colon

Although horses with this type of large colon displacement can have pain of variable intensity and most present as emergencies with acute colic, some can present with a history of low grade colic of variable duration. The colon becomes rotated around the right side of the cecum and becomes distended in the caudal abdomen. Clinical signs can vary from

mild to very severe, similar to those of nephrosplenic ligament entrapment. Treatment by “wait and see” approach or surgery are successful, depending on severity.

Right Dorsal Colitis

Right dorsal colitis is an insidious disease caused by diffuse and superficial necrosis with scattered erosions and ulcerations attributed to NSAID toxicosis. Progression of this lesion to a chronic form has a high mortality from colonic stenosis, luminal impaction, and colonic rupture. Clinical signs are usually low grade pain and an overall change in attitude. Supporting laboratory findings are mild anemia (rare) and hypoproteinemia (common). Ultrasound examination can be informative, because it can demonstrate the thickening in the wall of the right dorsal colon. Phenylbutazone administered per os can become bound to digesta in pony intestinal segments with the highest dry matter content, and it has been speculated that slow release from binding sites in the colon could explain its predisposition to ulceration. However, binding would be expected to be protective and toxic effects of NSAIDs are well established after parenteral administration. Interference with an anion transport systems that could be involved in pH regulation in the right dorsal colon has been suggested by in vitro studies and could be a factor in mucosal injury.

Treatment of right dorsal colitis is difficult because the pathogenesis of the disease is unknown, medical treatment can be slow and ineffective, and the lesion is often inaccessible for resection. NSAID administration should cease. The doses of NSAIDs required to induce right dorsal colitis are not high nor given for long in every case, suggesting that some horses are extremely sensitive to these drugs. However, restricted water intake could predispose to NSAID toxicity in horses.

Some success in treatment of right dorsal colitis has been reported with a low-bulk, low-roughage diet, such as replacing hay with pellets to reduce colon fill and abrasion, and with concentrates fed in small and frequent meals. Psyllium mucilloid can be added to the diet to produce short-chain fatty acids in the colon,

because these can promote mucosal healing. However, even if these acids are beneficial, it is unknown if the amount of psyllium fed to a horse can increase their production rate in the colon. Metronidazole can be given because anaerobes could infect the mucosa and exacerbate the tissue damage. Sucralfate has been proposed because of apparent benefits in human intestinal injury. Misoprostol is protective in acetic acid-induced colitis in laboratory animals and also could be of benefit, but should be used in care with pregnant mares.

Miscellaneous (Large Intestine)

Mural compression from an abscess, tumor, anomalous or inflammatory bands, adhesions, or hematoma, mesenteric anomalies (extremely rare), and inflammatory diseases, such as *Salmonella*-induced fibrosis, and eosinophilic enteropathy can cause low grade pain and recurrent colic. Intussusception (cecocecal, cecocolic, colocolic) can cause low-grade chronic or recurrent colic. Cecocolic is the most common type and the majority of these are treated early in the disease course by surgery, usually because the diagnosis is made by ultrasonography and because the typical presentation is a more severe form of colic. However, cases have been nursed through the initial colic and then treated conservatively, leading to weight loss, lowgrade pain, and eventually death from abscessation of involved intestine and peritonitis. Sand impaction can also cause low grade colic that recurs intermittently in horses with a history of access to sand, as in sandlot pastures and sandy soil, and in young horses that eat sand because of curiosity. These can be managed without surgery, by reducing access to sand and feeding good quality hay. The efficacy of psyllium is highly controversial, but can be used because it is unlikely to cause problems and owners will expect it.

Muscular Hypertrophy of the Ileum

Muscular hypertrophy of the ileum causes recurrent colic but can also cause ileal impaction and acute signs. The condition is considered idiopathic. Both the circular and longitudinal layers are increased in thickness and

the lumen is markedly constricted. The affected segment is usually 1 m long, but can be quite variable in length, diverticula are common, and full-thickness rupture can occur. The jejunum immediately proximal to the affected ileum can undergo compensatory hypertrophy in longstanding cases, but with an increase in lumen diameter.

The disease has been reported in foals, but it is most common in mature horses (more than 5 years). There does not appear to be a breed predilection. Most horses present with a history of recurrent, low-grade colic of variable duration, up to 2.4 years in 1 case, with or without anorexia, and weight loss. The involved segment can be palpated per rectum in some horses. Bypass of the affected segment by side-to-side ileocecostomy or jejunocecostomy, with or without transection or removal of part of the ileum, is usually successful.

Small Intestinal Intussusceptions

Although typically regarded as a cause of acute colic in foals, this age group is less frequently affected than older horses and a more typical age predilection is weanling to horses ≤ 3 years. Not uncommon in old horses also, when a small mucosal tumor acts as a leading point that drags the intussusceptum into the intussusciens. Short intussusceptions can cause a chronic disease in young horses characterized by weight loss, illthrift, and intermittent colic, usually postprandial colic. Gastric ulcers will develop in these horses but are usually secondary. Short jejunojejunal, ileoileal, or ileocecal are the different types and the latter is the most common. Ileocecal intussusception can form a short incomplete obstruction associated with a chronic disease, and tapeworms could predispose to this lesion.

Miscellaneous (Small Intestine)

Extraluminal or intramural obstruction in the small intestine can be caused by tumors, abscesses, hematomas, adhesions, anomalous bands, eosinophilic enteropathies, granulomatous enteritis, inguinal hernia, and congenital anomalies. Gastroduodenal ulcer disease (GDUD) and stricture in foals can cause signs

of recurrent colic, associated with bruxism, salivation, gastric distention and reflux. Gastric bypass surgery is the treatment of choice for gastric outflow obstruction. Some horses can be prone to different types of unrelated colic for reasons unknown, usually identified by surgery.

Prognosis

In one study, causes of chronic colic included colonic impaction (31%), peritonitis (16%), no diagnosis (8%), enteritis/colitis (7%), colonic displacement/torsion (6%), lymphosarcoma (4%), and to lesser extent, intestinal adhesions, ileal obstructions, liver disease, cecal impactions, thromboembolic disease, and intussusceptions. Exploratory celiotomy is necessary in most cases to make a diagnosis, but owners should be aware that some cases are not amenable to treatment. The prognosis for successful resolution is determined by the lesion, as for any type of colic, but is probably comparable to the prognosis for acute forms of colic. In some horses in which a specific

cause is not found at surgery, clinical signs can persist after surgery, and usually dietary and management changes are recommended for these horses.

REFERENCES

- Husted, L., Sanchez, L.C., Olsen, S.N., Baptiste, K.E., Merritt, A.M. Effect of paddock vs. stall housing on 24 hour gastric pH within the proximal and ventral equine stomach. *Equine Vet J* 2008; 40: 337-341.
- Lorenzo-Figueras M, Merritt AM. Effects of exercise on gastric volume and pH in the proximal portion of the stomach of horses. *Am J Vet Res* 2002; 63: 1481-1487.
- Huskamp B, Scheidemann W. Diagnosis and treatment of chronic recurrent caecal impaction. *Equine Vet J Suppl.* 2000 Jun;(32):65-8.
- Mair TS, Hillyer MH. Chronic colic in the mature horse: a retrospective review of 106 cases. *Equine Vet J* 1997;29:415-420.
- Mair TS, Hillyer MH. Recurrent colic in the mature horse: a retrospective review of 58 cases. *Equine Vet J* 1997;29:421-424.