Proceedings of the American Association of Equine Practitioners - Focus Meeting

Focus on Colic

Indianapolis, IN, USA – 2011

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How I Evaluate the Chronic Colic

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Author’s Note: Please see the appendix on page 56 that list drugs, doses indications, and author’s opinion.

Take Home Message

Evaluation of the horse that presents for chronic colic is a diagnostic and client management challenge to the clinician and potential source of frustration to the horse owner. A stepwise approach to clinical investigation and the setting of realistic expectations is paramount to reaching the best possible outcome for all involved parties.

Introduction

The horse that exhibits chronic, intermittent, colic creates a situation fraught with difficulties for both the owner and veterinarian. The owner may have sought many opinions, both lay and professional, prior to presentation. Considerable financial resources may have already been expended in attempting to secure a diagnosis, or in the absence of a diagnosis, a cure. Seemingly contradictory advice may have been given and followed resulting in further frustration for the owner. Diagnostic techniques in the horse vary greatly in their utility, cost and degree of invasiveness. Many factors have been incriminated experimentally and clinically in the precipitation of a colic episode, with great variation occurring between studies.1

Evaluation

History

Frequency and duration of colic episodes will vary. Horses may have repeated colic episodes of varying magnitude on a seemingly repeatable or random schedule. Careful examination of the history may uncover seemingly unrelated events that may act as ‘triggers’ that initiate the colic episode. These may include a feed change (quantity, quality or frequency), administration of medications, exercise changes, environmental changes, transport, social stress (in contact horse, owner), or estrous activity.

Physical Examination

The overall physical condition of the horse gives insight into management and underlying medical conditions that may be contributing to the signs of colic.

Loss of weight or inability to gain weight when presented with a high quality diet that is readily consumed in adequate amounts suggests malabsorption, maldigestion or catabolism.
Malabsorption and maldigestion result from inflammatory or infiltrative disease processes affecting the intestinal wall. Catabolism results from the energy demands of an underlying disease process that may be infectious, inflammatory, or neoplastic. Chronic pain can raise stress hormone levels leading to catabolism. Underlying metabolic derangements may be suggested by body conformation (e.g. Cushing’s disease, insulin resistance).

Diarrhea

The presence of diarrhea may indicate an infectious, infiltrative or inflammatory disease processes causing the colic signs. Chronic Salmonellosis with persistent inflammation, even if regional, may lead to intermittent abdominal pain. Medication usage (antimicrobials, NSAIDs) may cause colonic inflammation and secondary abdominal pain. Inflammatory bowel disease (IBD) may lead to chronic or intermittent diarrhea with or without concurrent abdominal pain.

Rectal Examination

The disposition and content of the abdominal viscera, intestinal wall characteristics, presence of extraneous masses, or alterations in the shape, location and consistency of the parenchymous organs may be detected on rectal examination. Chronic displacement or entrapment of the intestines may be palpable, and fecal impactions at the pelvic flexure, small colon and cecal base may be detected. Intestinal wall thickness may suggest infiltrative disease, or in the case of the ileum muscular hypertrophy. Serosal surfaces can be assessed for roughening which is suggestive of a septic peritonitis.

Ultrasonography

Disposition and size of the intestinal tract and organs within the abdominal cavity as well as their consistency, location and ultrasonographic architecture can be determined. Intestinal wall thickness can be objectively measured. The size of the stomach can be estimated. The location, amount, and consistency of peritoneal fluid may be determined aiding performance of abdominocentesis. Intestinal contents can be judged for propulsive activity and consistency.

Gastroscopy

Gastric ulceration when present can be a source of discomfort and chronic colic in affected horses. Gastric impactions, gastric masses and the majority of the stomach from cardia to outflow tract down to the pyloric sphincter can be evaluated with a 3 meter scope. It should be noted that the absence of gastric ulceration does not preclude ulceration in more distal areas of the intestinal tract e.g. right dorsal colon, cecum.

Laboratory Evaluation

Complete Blood Count and Serum Chemistry

The presence of an inflammatory leukogram may suggest abdominal abscessation, peritonitis or adhesion formation. Disturbances in specific serum chemistry values may reflect inflammation,
dysfunction or obstructive lesions of the liver (SDH, AST, GGT, bile acids, hypoalbuminemia) or kidney (creatinine, BUN, hypoalbuminemia).

Fecal Examination

Evidence of parasitism may be confirmed with fecal analysis for the presence of fecal eggs. However, when encysted stages are present a heavy burden of parasites can evade detection due to being located in the colonic wall.

Peritoneal Fluid

Evaluation of peritoneal fluid should accompany all chronic colic investigations. The presence of increased protein, increased cellularity or signs of sepsis suggest an inflammatory or infectious process within the peritoneal cavity. Cytology may indicate the presence of neoplastic cells, however this is highly dependent on the type of neoplasia and often requires several fluid collections to yield neoplastic cells if present.

Absorption Studies

Absorption studies are useful indicators of the integrity of the small intestinal wall. Inflammatory and infiltrative disease has been shown to delay or curtail absorption of sugars. However, delayed gastric emptying may affect the absorption curve so the horse must be fasted prior to testing and any delay in gastric emptying will affect results. Glucose, while commonly used, is metabolized in the gut wall and degrades rapidly following collection in standard blood tubes. It is useful for stall-side testing. A sugar that does not naturally occur and is not metabolized to any extent, D-xylose, can also be given, however, the assay for D-xylose is no longer readily available.

Rectal Biopsy

Biopsy of the rectal mucosa has been practiced as a proxy for histological lesions in the large colon. Intestinal neoplasia can in some cases be detected by this means. Other infiltrative and inflammatory diseases are similarly possibly detectable in this fashion. This is a relatively low-yield diagnostic technique that requires a high degree of skill to perform, and this procedure is not without possible complications such as abscess formation and secondary full thickness rectal perforation and septic peritonitis.

Radiography

The presence of mineral dense opacities in the large colon can be detected in smaller fasted horses, classically the Arabian. These include sand and enteroliths. The utility of radiology is constrained by the size of the horse, radiological technique available and scatter inherent in imaging a large dense area of the horse. Radiographic confirmation of an enterolith with field radiographic equipment is difficult, with the presence of enteroliths only suspected due to their vague outline contrasting against colonic gas.
Laparoscopy

Less invasive than exploratory celiotomy, laparotomy allows visualization of limited areas of the peritoneal cavity and viscera. Performance of laparoscopy in the standing horse greatly limits exposure to the entire peritoneal cavity. Standing laparoscopy is most useful for suspected lesions in the dorsal aspect of the peritoneal cavity, while laparoscopy in dorsal recumbency is most useful for suspected lesions in the ventral regions of the abdomen. Abnormal structures can be visualized and biopsied, with small discrete structures removed.

Exploratory Celiotomy

Exploratory celiotomy is an invasive but useful technique, allowing direct visualization of abdominal viscera and harvesting of histological samples from representative areas. Surgical correction of lesions and preventative measures such as colonopexy or colon resection for chronic large intestinal displacement can be performed.

Treatment as a Diagnosis

The intractable nature of some chronic colic horses often leads to the use of empirical treatments as a means of establishing a diagnosis. In one retrospective study, 8% of the cases of chronic colic in horses examined did not achieve a definitive diagnosis.3

Feeding trial: horses evolved as freely moving continuous grazers and obligate gastric acid secretors. With domestication they have been subjected to confinement and interval feeding. The presence of feed material continuously in the gastrointestinal tract may in many horses lead to resolution of chronic colic. Buffering of gastric acidity by maintaining hay within the stomach is beneficial in many horses.

Alternatively, removal of roughage from the diet and exclusive feeding of an extruded complete ration resolves problems in many horses that exhibit chronic colic. The rationale behind this seemingly contradictory approach is the curtailing of colonic fermentation and diminishing of volatile fatty acid (VFA) production within the colon. The presence of VFA may be irritating in situations where pre-existing inflammatory changes of the intestinal wall are present. Gas production is also decreased.

Larvicidal dewormers: the presence of encysted cyathostomes (small strongyles) has been well reported as a cause of colonic inflammation. Diagnosis is challenging as the infection is not patent. Administration of corticosteroids in conjunction with fenbendazole will allow maturation of encysted parasites, thereby improving their susceptibility to treatment.4

References
