Does hind gut pathology exist or matter?

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For The Education Center

The equine veterinary community is generally familiar with gastric ulcers in horses (EGUS). This alarmingly prevalent condition is readily diagnosed and treated, thanks to the availability of 3-meter gastric endoscopes and proton pump blockers, respectively.

Meanwhile, conditions of the equine intestinal tract, especially the hind gut, have often been overlooked, in spite of its significant size and role in digestion. Recent research may be on a course to change this, raising the possibility of equine GI tract pathologies that are likely significant and may be nearly as ubiquitous as EGUS.

Importance of the Hind Gut

The digestive processes of the horse have evolved to make maximum use of coarse fibrous foods typical to the animal’s natural grazing lifestyle. Horses allowed to follow this grazing pattern nibble on food continuously throughout the day. They are referred to as “trickle feeders,” which means the naturally grazing horse is consistently eating, chewing, salivating and swallowing repeatedly over the 24-hour cycle.

Horses are evolutionarily adapted to making use of bacteria and other microorganisms to convert the structural carbohydrate and digestively inaccessible proteins, vitamins and minerals into absorbable nutrients capable of maintaining the physiology of the species.

It is clear that the overall health of the horse depends on its large colon and cecum for this highly adapted and specialized digestive system.

Modern Management, Modern Problems

In contrast to the horse’s natural feeding behaviors, and the anatomy and physiological processes that support them, modern management systems include routine feeding of high levels of starches and other nonstructural carbohydrates, oils and fats, and proteins. These are mostly easily digestible feeds that do not require hind gut breakdown. They do, however, probably explain why so many intestinal problems exist in artificially fed horses.

Gastric ulceration syndrome has become the focus of a vast pharmaceutical and veterinary health care industry relying on proton pump blockers and repeated gastroscopy to monitor the “cure.” It is likely that this condition arises either incidentally—in which case it is overdiagnosed and overmanaged—or as a result of mismanagement of the feeding.

Shifting Attention to Beyond the Stomach

Studies underway at the University of Glasgow in Scotland have confirmed that subclinical hind gut pathology exists in a high proportion of modern horses maintained on artificial feeding systems. Horses that have a totally natural diet, or a diet that at least utilizes the natural feeding pattern of the horse—trickle feeding of high-fiber, low-starch feeds—have, with the obvious exception of parasitic infestation, fewer gastric and fewer large colon disorders.

As a result of this, several questions need to be answered:

→ Does a natural feeding system that trickle-feeds high-fiber, low-starch feed improve the overall health of the digestive tract of horses?
→ Does the persistent administration of proton blocker drugs influence the function of the hindgut?
→ Does modern management result in an increase in the incidence of hindgut pathology (other than parasites)?
→ Does a natural feeding method that encourages chewing, salivation and subsequent normal digestion result in less significant effects from parasitic infestation?

What pathology exists in the large colon, and how significant is this to the health of the horse in terms of both its well-being and its performance?

The studies at Glasgow University have identified that even horses ostensibly normal from a gastro-enteric perspective (i.e., they have no history of intestinal disease) have a high prevalence of detectable and likely significant pathology. There does appear to be a serious issue here.

Need for Hind Gut Diagnostics

Areas of colonic or cecal pathology are not easily recognized by any current means. We are reliant on abdominal ultrasound, which is a very insensitive and nonspecific diagnostic method; intestinal biopsy of defined areas requiring laparotomy; or at least laparoscopy or examination of the fecal output of the horse (which forms the focus for parasite investigation).

Detection of abnormal concentrations of fecal albumin and hemoglobin does provide some guidance as to the existence of hindgut pathology. One commercially available fecal occult blood test, Succeed Equine Fecal Blood Test from Freedom Health LLC, combines a test for fecal hemoglobin with one for albumin. This is a very nonspecific test, much like a thermometer. Still, the contributions of such nonspecific indicators of health to the diagnostic process are undeniably valuable.

Due Diligence

Franklin L. Pellegrini, DVM, in 2005 identified that ulceration—probably including inflammatory changes—was very common in horses at an equine abattoir.1 These findings were not followed up with a histological investigation of those cases. Further, because the study was conducted at a slaughterhouse, whether the horses had any history of intestine or other pathology was not established.

Dr. Pellegrini’s findings corresponded closely with those of our study at Glasgow University, but we have been able to investigate these in greater depth from a histological perspective. In doing so, it appears that infiltrative bowel disease syndromes are far more prevalent than we thought and can be broken down into a variety of conditions. These likely have very different implications and horses may be affected subclinically.

The clinical implications of the various conditions affecting the large colon are not yet defined, but it is reasonable to suppose that there would be some effect on the digestion and physiology of the patient. Behavioral signs, colic, weight loss and various other alterations in intestine or function are likely.

What Does it Mean?

If we accept that large colon disease exists, and if we accept that it is likely to affect the welfare of the horse, then we need to explore the various conditions and identify methods for the differential diagnosis.

Gastrointestinal conditions are largely a result of modern management and domestication. We therefore have a responsibility to research them and devise strategies to prevent them. We urgently need to devise ways of restoring the management of our horses to a more natural state with methods that avoid large volumes of feed at irregular, or even regular, intervals and long periods of time when they are expected to be without food.

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REFERENCE


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