



Gastroscopy performed with a mobile system

EQUINE GASTRIC ULCER SYNDROME (EGUS) PERFORMANCE KILLER (PART 1)

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IN HUMAN MEDICINE, GASTRITIS IS ONE OF THE MOST COMMON STRESS RELATED MALADIES. IN HORSES, AS WELL AS IN PEOPLE, GASTRIC ULCERS ARE A WOUND IN THE LINING OF THE STOMACH CAUSED BY ACID. IN PEOPLE, ULCERS ARE ASSOCIATED WITH A BACTERIUM KNOWN AS *HELICOBACTER PYLORI*, WHICH HAS NOT BEEN IDENTIFIED IN HORSES. EVEN THE PATHOPHYSIOLOGY OF THE HUMAN AND THE EQUINE DISEASE DIFFERS WITH MORE OR LESS THE RESULTING DILEMMA: WEIGHT LOSS, RECURRENT OR ACUTE COLIC, DECREASED APPETITE, REDUCED MANURE PRODUCTION, POOR BODY CONDITION, POOR HAIR COAT, AND A CRABBY ATTITUDE, CONSEQUENTLY ENDING IN POOR PERFORMANCE. IF GASTRIC ULCERATION BECOMES SEVERE, THE EROSIONS MAY BEGIN TO BLEED. HORSES CAN EVENTUALLY BECOME ANAEMIC AND LOW IN PROTEIN DUE TO LOSSES THROUGH THE GASTRIC ULCERS. ADVERSE OUTCOMES OCCASIONALLY HAPPEN IN HORSES WITH STOMACH ULCERS. THE ULCERS MAY PERFORATE INTO THE ABDOMINAL CAVITY RESULTING IN INFECTIOUS PERITONITIS AND RAPID DEATH. SCARRING OF THE ESOPHAGUS, GASTRIC PYLORUS OR DUODENUM MAY ALSO OCCUR, RESULTING IN SWALLOWING PROBLEMS, EMPTYING OF THE STOMACH AND COLIC.

Many stress factors associated with a horse's management have been related to the development of equine gastric ulcers. However scientists are currently aware of changes in feeding and alterations in training routine; the two biggest contributors that make a horse more susceptible to develop gastric ulcers.

A number of studies revealed that equine ulcers may be more prevalent throughout the horse population than veterinarians and horse owners once believed. For a long period of time the problem was associated with racehorses only. But indeed, the condition also affects between 30 and 60 percent of all dressage, jumping and endurance horses.

Studies point out that gastric ulcers occur in up to:

- 37% of leisure horses¹
- 63% of performance horses^{2,3}
- 93% of racehorses⁴

The stress of the training schedule causes an increased release of corticosteroids and subsequently a decrease in blood flow to the stomach lining. This impedes the natural protective mechanisms of the stomach resulting in an augmented damage from gastric acids. All the risk factors for equine gastric ulcers have yet to be determined, but some of the more common causes are listed below:

PSYCHOLOGICAL STRESS:

Psychological stress is sometimes difficult to assess in horses. But stressful conditions will negatively affect feed intake, resulting in periods of increased stomach acidity. Transportation and stable confinement are proven risk factors in causing ulcers.

PHYSICAL STRESS & ILLNESS:

Gastric ulcers can occur in response to any type of painful condition or illness.

DIET:

Feeding time: as horses are "trickle feeders" there is a continuous secretion of acid within the stomach, hence prolonged periods without food to neutralise that acid can lead to ulceration. When horses are denied free access to feed or fail to eat, ulcers develop rapidly.

TYPE OF FEED:

Use of concentrated feeds may also contribute to ulcer risk by changing the gastric PH and increasing gastrin levels.

TRAINING REGIME:

There is an obvious correlation between equine training and gastric ulceration. Even non-intensive training is associated with decreased blood flow to the stomach, leading to a high occurrence of

stomach ulcers. Additionally the increased pressure in the abdomen during exercise pushes acid up into the sensitive portion of the stomach.

PHARMACEUTICALS:

Medications, such as corticosteroids or non-steroidal anti-inflammatory medications e.g., phenylbutazone (Bute), flunixin meglumine (Banamine), may also cause gastric ulceration.

OTHER CAUSES:

Under certain circumstances, bile acids may reflux into the stomach and will damage the stomach lining.

It is important to know, that horses can develop severe ulcers even in the absence of the typical risk factors.

DIAGNOSIS:

A definite diagnosis of EGUS can only be determined by gastroscopy. An examination of the stomach with a very long endoscope. For a midsize warmblood you need at least, a three meter (better 3.30m) endoscope to visualise the entire stomach and the first part of the small intestine including the opening of the bile ducts. In order to obtain a good view of the stomach, it is important for the stomach to be

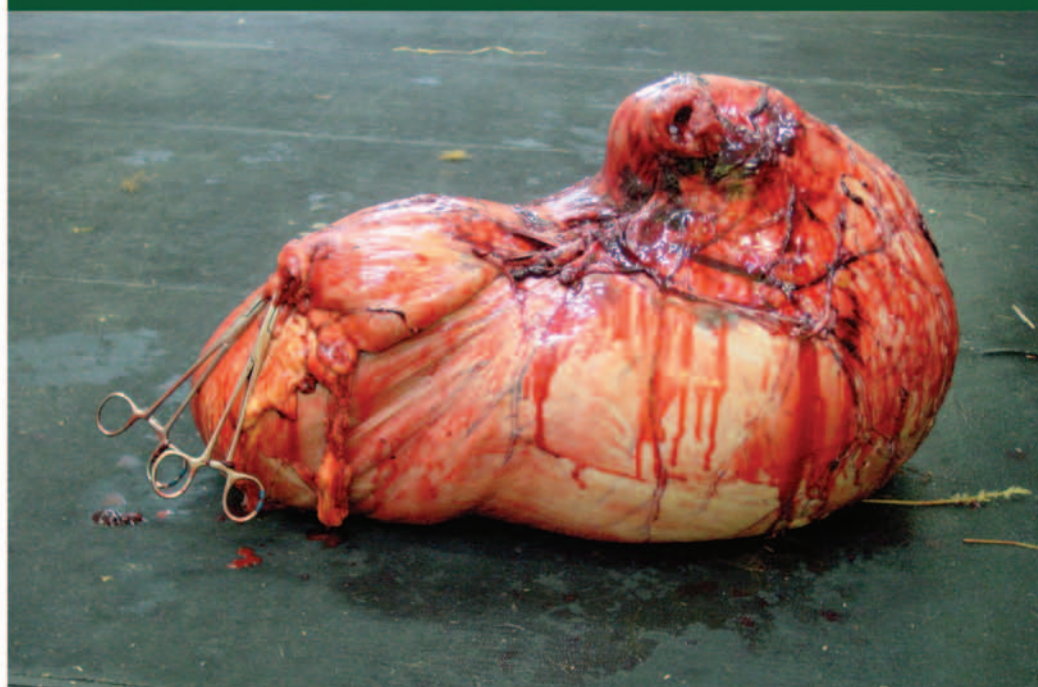
For that reason, prior to submitting to an endoscopic examination for ulcers, a horse will have his food withheld for about 12 hours, and he won't be allowed to drink water for about six hours before the exam. The veterinarian will then insert the flexible endoscope through the horse's esophagus and into his stomach. Since a few years, modern portable systems were available to perform gastroscopy directly in a breeder's barn, so transportation to the clinic will not be an additional stress factor. Gastroscopy is not painful, but a procedure that will help your vet diagnose and treat a chronic, debilitating pain.

TREATMENT:

The main goal is to reduce gastric acidity, either by changing management and/or medical treatment. Management changes are the essential part of the treatment of horses with gastric ulceration. Affected horses need:

- Plenty of time at pasture
- Continuous access to forage, if stabled
- Minimal stress
- Reduced level of training
- Reduced levels of grain and concentrates in the diet
- Substances that help to protect the stomach

▼ Chronic gastric dilatation (5 times normal size)



Regrettably, these recommendations are tough to achieve for most elite equine athletes. With sport horses, intensive training tends to go hand-in-hand with infrequent turnout, low-roughage and high-concentrate feeding. Consequently medication (e.g. Omeprazol) is needed to facilitate the healing of gastric ulcers and prevent recurrence.

- Decreased performance
- Attitude change (reluctance to work)
- Weight loss
- Poor body condition
- Poor hair-coat
- Crabby attitude
- Reduced appetite
- Mild to moderate colic
- Diarrhoea
- Grinding of teeth

Effective medications (Omeprazol, Cimetidin, Ranitidin etc.) are available from your vet to help reduce the risk of gastric ulcers before an expected period of psychical stress such as transportation, surgery, excessive training or weaning. For example, if your horse is travelling a great deal to perform in a number of competitions and is likely to be subjected to stressful conditions, it might be worth considering medical intervention to keep him from developing ulcers. When used as a preventative, omeprazole for example is administered in half the normal treatment dose. It's an approach that is being adopted by most upper-level riders and trainers.

In foals, teeth grinding and excessive salivation But remember, in some horses the clinical signs of ulcers are not noticeable! The only subtle hint is poor athletic performance.

HOW CAN MY HORSE BE EXAMINED FOR GASTRIC ULCERS?

The only way to get an accurate diagnosis is by gastroscopy (endoscopy of the stomach)!

CAN THE ULCERS BE TREATED?


Yes, by changing the feeding and training management in addition to the treatment with omeprazol.

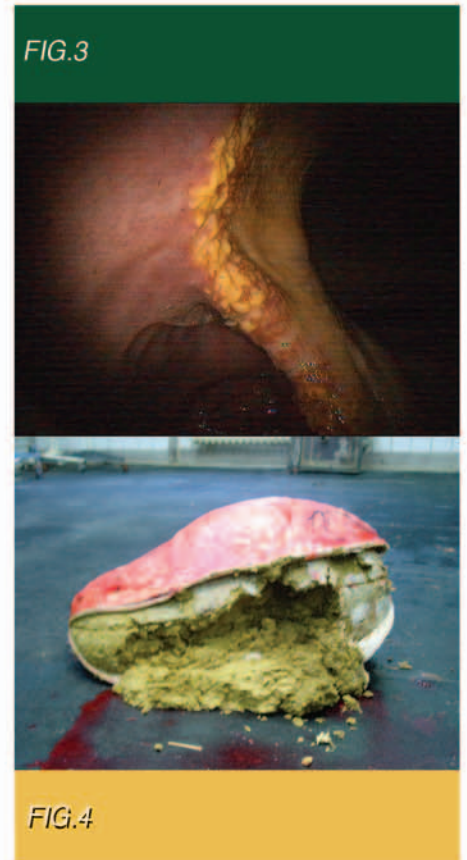
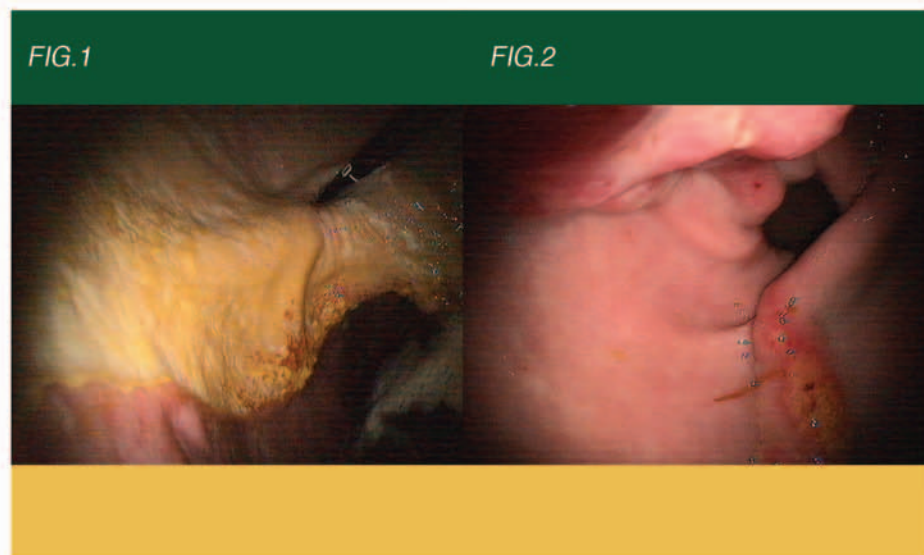
SUMMARY:

WHAT ARE THE SIGNS OF GASTRIC ULCERATION?

- Poor appetite

WHAT CAUSES GASTRIC ULCERATION IN HORSES?

Psychological stress, physical stress, illness, diet, training regime, & pharmaceuticals. 



- ▶ FIG.1: Stomach "entrance": the endoscope is visible coming out of the oesophagus (moderate ulcerations are visible just below the entrance)
- ▶ FIG.2: Stomach "exit" (Pylorus): with multiple tumors around the pylorus
- ▶ FIG.3: Typical lesion on the margo plicatus (gastric ulcers)
- ▶ FIG.4: Stomach opened after euthanasia; diagnosis failure of gastric emptying due to severe ulceration on the pylorus leading to chronic gastric overload and dilatation. An earlier diagnosis & appropriate treatment could have saved the horses live