



Equine Grass Sickness

Equine Grass Sickness (EGS) is a devastating disease that affects horses, ponies and donkeys. Damage to the nervous supply to the intestines causes paralysis of the gastrointestinal tract, which is usually fatal.

What causes Grass Sickness?

Despite extensive and ongoing research, the exact cause of EGS is still not completely understood. There is an increasing amount of evidence to support the theory that the disease is caused by a bacteria called *Clostridium botulinum*. The bacteria are eaten from the soil whilst the horse is grazing and overgrow in the gut. The bacteria then release toxins which are absorbed into the blood and target the horse's nervous system. The toxins primarily affect the nervous supply to the gastrointestinal tract, as well as other body systems.

Why do some horses and not others get Grass Sickness?

EGS occurs sporadically and is more common in certain

geographic areas. The disease is most prevalent in Scotland but has been reported in all areas of the UK. The disease affects only horses that have access to grass and occurs most commonly after horses have been exposed to a new pasture. Young horses (2-7 years of age) are most commonly affected and the peak incidence is in the spring and early summer. Other risk factors include recent soil disturbances, sandy soil, soil with high nitrogen content, properties with high concentrations of horses, lack of supplemental feeding to horses at grass and a history of prior cases on the premises.



Colic is one of the major clinical signs of grass sickness

What are the clinical signs?

EGS occurs in three forms, depending on the extent of damage to the nervous system.

The most dramatic form is known as acute grass sickness and the horse is suddenly affected by complete gut paralysis. Colic is the

main clinical sign and the horse will often roll, sweat and paw at the ground. When the horse is examined by a veterinary surgeon, the heart rate is very high and distension of the intestines is detected. Other signs include an inability to eat and the horse may reflux food from its nose. Horses also will often have muscle tremors, especially over the shoulder and flanks. The eyelids are frequently 'droopy', giving the horse a sleepy-looking appearance. Occasionally, horses are found dead after their stomach has ruptured.

The subacute and chronic forms are less sudden in onset. Rapid weight loss and weakness are common and signs of colic are milder. The horse often appears very 'tucked up' in appearance.

A week in brief...

Monday

The week starts with the admission of a sick foal into the Neonatal Intensive Care Unit (NICU). 'Fred' was born after a difficult foaling and the stud manager was concerned that he was starved of oxygen during delivery. He is six hours old when he is admitted and is collapsed and unable to stand. The foal team sets to work trying to stabilise him, using a combination of oxygen, intravenous fluids, antibiotics and intensive nursing.



Fred on admission to the NICU

Tuesday

A 6-year-old Warmblood gelding arrives at the hospital for evaluation of signs of mild colic after eating. He undergoes a full investigation including blood tests, ultrasonography, peritoneal tap,

rectal examination and gastroscopy. He is diagnosed with gastric ulcers, a common problem in performance horses. He is discharged with a month's course of treatment with anti-ulcer medication. Fred is having intermittent seizures and is still semi-comatose. He is treated with a continuous infusion of drugs to control his seizures and started on intravenous nutrition to help him recover.

Wednesday

'Poppy', a 3-day-old foal, presents for signs of weakness. Blood tests show



Poppy receiving a blood transfusion

that she is severely anaemic and her gums have a yellow coloration. We diagnose her with "Haemolytic Foal Syndrome" or "Neonatal



Poppy's yellow gums

Eating is difficult due to paralysis of the muscles involved in swallowing and salivation occurs. Patchy sweating and muscle tremors occur. In horses that are affected by the slowest form of the disease, inflammation of the nostrils leads to a 'snoring' noise whilst breathing.

Diagnosis

All horses with colic should be examined by a veterinary surgeon. In the acute form of the disease it is often very difficult to distinguish between EGS and other types of surgical colic and horses are often referred to an equine hospital. Although the disease is often suspected based on the clinical signs the horse is showing, confirmation of the disease is often more challenging.

In many horses emergency surgery is necessary to distinguish between EGS and other severe types of colic. Diagnosis requires examination of a small biopsy of the intestine which is taken during surgery. In some cases, this can be done whilst the horse is standing and sedated,

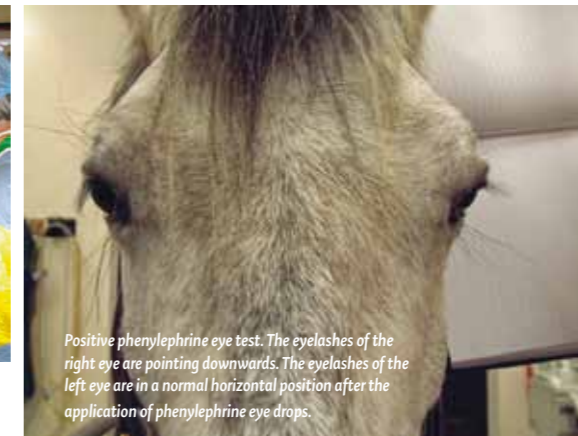


Ileal biopsy performed whilst the horse is standing and under sedation.

but often the procedure is carried out under a general anaesthetic. Other tests that can be helpful in diagnosing the condition include x-rays of the oesophagus, using contrast to assess the horse's ability to swallow, and the application of phenylephrine eye drops into the horse's eyes.

Treatment

Unfortunately EGS is usually a fatal condition in horses. Invariably all horses that are diagnosed with the acute and subacute forms of the



Positive phenylephrine eye test. The eyelashes of the right eye are pointing downwards. The eyelashes of the left eye are in a normal horizontal position after the application of phenylephrine eye drops.

disease will die or have to be euthanised on humane grounds. Some horses diagnosed with the chronic form will survive but they will need prolonged intensive nursing and veterinary care. However, their survival is largely determined by the severity of the nerve damage and the associated complications. Consequently, even with the best care, a horse may not survive.

Prevention

Prevention of the disease is difficult

because it is not easy to predict when the disease is likely to occur. General recommendations which may be helpful include gradual introduction into new pastures, avoiding turnout in pastures after recent soil disturbances, offering additional hay to your horse when turned out (especially when grass levels are low), and trying to avoid stressful events. If there has been a history of a case of grass sickness in a particular pasture then it is especially important that young horses are not suddenly turned out into these areas. Horses do seem to acquire some resistance to the disease and older horses are less commonly affected. Extensive research into EGS is continuing, with the hope that a vaccine to prevent the disease will become available.

Further information can be found at www.grassickness.org.uk



Dramatic weight loss and a tucked-up appearance in a horse with chronic grass sickness. Image courtesy of Richard Payne, RosSDales.

isoerythrolysis", a disease in which the foal absorbs antibodies in the mare's colostrum which break down the foal's red blood cells. Poppy is given a blood transfusion and responds really well.

Thursday

A 17-year-old mare is evaluated for signs of weight loss. Ultrasound and x-ray evaluation of her chest show that she is suffering from a chronic pneumonia. Treatment with antibiotics and anti-inflammatory medication is started. Fred is starting to show very encouraging signs of progress. He is now able to stand up with some help and is showing interest in his mum.



Ultrasound evaluation of a 17-year-old mare with signs of weight loss



Mare fitted with telemetric ECG to record foetal heart rate

Friday

A mare in late pregnancy comes in as an emergency case showing signs of colic. She is diagnosed with a uterine torsion, which is corrected by the surgical team. Post-operatively she is fitted with a telemetric ECG (electrocardiogram) to enable us to monitor the unborn foal closely. This

helps to maximise the chances of the foal being born healthy. The mare is very comfortable after surgery and the foal's heart rate is regular. Fred is doing really well and is getting up on his own. He is getting stronger every day and is going to make a full recovery.



Fred and his mum out enjoying the sunshine



Name: Emily Haggett
Qualifications: BVSc (Hons), DACVIM, MRCVS
Year of graduation: 2003
Main interests: I qualified from the University of Bristol in 2003, after which I worked as a veterinary surgeon in mixed practice for 18 months. I subsequently took a few months out to go travelling before becoming an intern at the Liphook Equine Hospital in Hampshire. In 2006 I moved to the USA where I completed a 3-year residency in equine internal medicine at the University of California's Veterinary Medical Teaching Hospital at Davis. I returned to the UK in 2009 and am now settled in Newmarket, having joined RosSDales in September that year. I work in the internal medicine department and ambulatory practice. My main interest is foal medicine and I spend the majority of my time working in the Neonatal Intensive Care Unit. Outside of work my main interests are running, travelling, skiing and walking my dog!



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