



VET NOTES

AUGUST 2009

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Equine Cushing's Disease

What is Equine Cushing's and who is affected?

Cushing's is an endocrine disorder that occurs in older horses commonly between the ages of 12 to 30 years of age with a median age of 23 years. There does not seem to be any one breed or sex that is predisposed to developing Cushing's except that pony breeds are more commonly affected compared to horse breeds. The recognizable clinical signs that prompt owners and veterinarians to pursue further diagnostic testing include: long, shaggy, curly hair coats that do not shed in the spring or shed at later times of the year than normal, recurrent laminitis, potbelly appearance of the abdomen, and generalized muscle wasting with abnormal fat deposition. The normal regulatory pathway that malfunctions and results in Cushing's begins in the brain and ends at the adrenal glands. The result is a systemic increase of cortisol, this increase is what causes most of the clinical signs that we see with Cushing's.

Clinical Signs of Cushing's

The most common clinical sign of Cushing's is hirsutism, which is a long curly hair coat that fails to shed at seasonally appropriate times. In early stages of the disease the hair may just be long and curly on the back of the legs or there may be patches of longer hair throughout the coat that fails to shed. In advanced cases the horse's body is covered with a long curly coat that does not shed out and will even grow back in the middle of summer after being clipped.

The most important clinical sign of Cushing's is chronic laminitis, which occurs in 50% of horses with the disease. The two most unrecognized clinical signs are weight loss (muscle catabolism) and abnormal fat deposition, especially in early stages of the disease. The body starts to utilize muscle protein as an energy source and the glucose gets con-

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verted into fat and stored in the crest of the neck, periorbital space, and tail head. It is the thinning and weakening of the abdominal muscles that result in the potbelly appearance. The abnormal fat deposition and potbelly look is the reason for commonly overlooking the muscle wasting that occurs with this disease.

There are a number of other clinical signs that occur **less frequently** with Equine Cushing's and they include excessive urination and drinking, decreased wound healing, lethargy, poor performance, increased pain tolerance and excessive sweating partially due to the persistent winter hair coat. A multitude of secondary infections also occur because of the suppressed immune system, which can include skin problems, sole abscesses, conjunctivitis, and sinusitis.

Diagnosing and Testing for Cushing's

In advanced cases the presence of hirsutism is sufficient for a definitive diagnosis. In less obvious cases there are a few tests that may be performed which include comparing ACTH levels in the blood and the dexamethasone suppression test. The ACTH levels in the blood are measured and compared to standards. If there is an elevated concentration, the horse will be considered positive for Cushing's. The problem with this test is that there are false negatives, mainly because horses in the early part of the disease may not have ACTH concentrations out of the normal range, but then do as the disease progresses untreated. Currently the dexamethasone suppression test is considered the gold standard when testing for Cushing's. This test is a two step process. First, in the late afternoon or early evening a blood sample is drawn from the horse, immediately followed by administration of IV dexamethasone. Then, another blood sample is taken midmorning the following day. The downfall to this test, although the risk is very low, is exposing a horse who is already "at risk" for laminitis to dexamethasone, which is known as a possible causative agent of laminitis. Testing in the Fall is no longer recommended because during that time of year the pituitary has naturally increased activity due to the shortening day lengths and false results are more common.

Treatment

Medications available for the treatment of Cushing's in the US include pergolide and cyproheptadine. Currently pergolide is the drug of choice as it is a long acting dopaminergic agonist. With pergolide the clinical signs of Cushing's decreases within approximately three months and the curly/shaggy hair coat will decrease with the next hair cycle.

shipping fever turns into a nightmare

- November 2007 - Proximal hind limb suspensory desmitis (PSD): Part I: Diagnosis
- August 2007 - Intramuscular injections
- June 2007 - A hard pill to swallow
- April 2007 - The advantages of high fat/low carb diets
- March 2007 - Bandaging
- February 2007 - Single screw compression V. Screws and wire (Transphyseal bridging)
- January 2007 - The dental health of young performance horses
- December 2006 - Neonatal Isoerythrolysis in foals

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