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## Laminitis Caused by Equine Cushing's Disease, Penn Study Finds

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Equine Cushing's disease has been identified as the most common cause of laminitis among horses in a primary care veterinary practice. The recent study by **Mark T. Donaldson, V<sup>93</sup>**, assistant professor of medicine, was published in the April 1, 2004 issue of the *Journal of the American Veterinary Medical Association*.

The study showed the most common cause of laminitis among horses seen at New Bolton Center was pituitary pars intermedia dysfunction, also known as equine Cushing's disease (ECD). In ECD the pituitary and adrenal glands produce abnormal amounts of hormones that play a vital role in the regulation of metabolism and inflammatory and immune responses.

All horses that developed laminitis during a six-year period (1996–2002) were tested for ECD by evaluation of plasma ACTH concentra-

tions. ACTH is one of many hormones secreted in excess by the dysfunctional pituitary gland. Twenty-eight of the 40 horses with laminitis were diagnosed with ECD. Although ECD is considered a disease of older horses with an average age of 20 years, the study showed that ECD is common in horses in their teens. The horses in the study ranged in age from three to 28 years with a median age of 15.5 years.

One of the most common clinical signs was an abnormal fat distribution including accumulation of fat in the neck ("cresty neck"), top of the back, and over the tail head, in a horse with visible outlines of the ribs. Only a third of the group had a long hair coat, another conspicuous sign of ECD, and a fifth of the group with ECD did not have any other clinical signs.

In 21 percent of the horses with ECD, onset of

laminitis occurred during September. Excess consumption of lush grass was commonly blamed for laminitis in many horses that also had ECD. Dietary modification of horses with ECD may be helpful in preventing this serious complication.

Several studies have shown that the most effective treatment for ECD is pergolide, a medication that suppresses secretions of hormones from the abnormal pituitary gland. In addition to dietary modifications and corrective shoeing, treatment with pergolide results in an improvement in laminitis. A large dose range exists and the dose must be titrated based on endocrine function tests such as plasma ACTH concentration. The drug must be administered under veterinary supervision.

## Seahorse Surgery

A very unusual patient visited the Ryan Hospital on April 23. A six-inch, two-year-old female seahorse was brought to the Hospital by veterinarians from the National Aquarium in Baltimore. The seahorse had a pea-size growth on its pectoral fin, near the gills. "Last October we removed a mass by conventional surgery," said Dr. Caryn Poll of the National Aquarium. "But the mass grew back and we are here to have it removed by laser surgery."

**Chick Weisse, V<sup>98</sup>**, lecturer in surgery, enjoys working with marine animals and has performed numerous surgeries on fish. The little seahorse was his first patient of the *Hippocampus* variety.

The animal was anesthetized in water; it took about five minutes for it to become unconscious. Then it was removed from the water and placed on the table, and Dr. Poll carefully syringed water over the gills while Dr. Weisse used the tiny laser probe to remove the tumor. He then used the laser to ablate the tumor bed in the hope of removing any remaining cancer cells that could regrow. "Seahorses have a bony layer within the skin, called osteoderm, so one can't just cut away the tumor without leaving a large defect," said Dr. Weisse. "The laser removed the layer of cancer cells while sealing the



The pea-sized tumor was removed by using a laser probe.

blood vessels, nerves, and lymphatics."

The surgery lasted only minutes, and that same day, the *Hippocampus reidi* was safely back in her tank at the National Aquarium, swimming around. In lay language she is called a longsnout seahorse, and her natural home is the Western Atlantic.

## Bellwether

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