



Cushing's Disease

Hyperadrenocorticism or Cushing's disease is a condition in which the body produces too much corticosteroids. Corticosteroids are produced by the adrenal glands. The adrenal glands and the pituitary gland in the brain have a feedback system for regulation of steroid production. The pituitary gland is responsible for indicating to the adrenal glands to produce more steroids if the body needs more and to stop producing them if there is already enough. Steroids are produced in excess if the feedback system is not functioning properly. This can occur if a tumor is present in the pituitary gland resulting in pituitary dependent hyperadrenocorticism, or a tumor is present in one or both of the adrenal glands resulting in adrenal dependent hyperadrenocorticism. Approximately 80% of dogs with Cushing's disease have pituitary dependent hyperadrenocorticism.

Clinical Signs

- Increased thirst
- Increased urination
- Increased hunger
- Panting
- Muscle loss
- Hair loss, thin hair coat, changes in hair coat
- Hair loss of the tail resulting in a "rat-tail"
- "pot-bellied" appearance
- Lethargy



Diagnosis

A complete blood count, chemistry and urinalysis are the first steps in diagnosis. The liver value alkaline phosphatase or ALP is typically increased dramatically due to steroid induction. The urine is often found to be dilute with protein present and will have a higher risk of bacterial infections.



When Cushing's disease is of high suspicion, performing a more specialized blood test is needed for a diagnosis. A low dose dexamethasone suppression test is the test most often recommended as it may be able to also confirm whether pituitary or adrenal dependent Cushing's disease is present. This test works by first measuring the amount of baseline cortisol in the blood. Then a low dose of dexamethasone or steroid is administered to the patient and a second cortisol level is measured in the blood. The body should stop producing natural steroids as a steroid injection was just given. A dog with Cushing's disease and inappropriate production of steroids will

continue to produce steroids resulting in an elevated level on the test. Other possible tests used for diagnosis include a high dose dexamethasone suppression test or an ACTH stimulation test.



An abdominal ultrasound can be performed to evaluate the adrenal glands for their size and shape. It is also helpful in differentiating adrenal dependent hyperadrenocorticism from pituitary dependent. If an adrenal tumor is located, surgical excision of the tumor may be a possibility and can result in a cure.

Treatment

Vetoryl (trilostane) is the medication of choice for dogs for the treatment of Cushing's disease. It is given once or twice daily to decrease the cortisol production by the adrenal glands. After 7-10 days on the medication, a second blood test, an ACTH stimulation, is performed to assess the efficacy of the medication. Dose adjustments are made based on blood test results. An ACTH stimulation test needs to be performed after all dose adjustments to confirm safety and efficacy.



Older medications such as lysodren (mitotane) are still available and very effective but have a narrower safety margin for use.

Monitoring

As Cushing's disease is a dynamic disease, it will often require minor dose adjustments as time goes on. As such, routine ACTH stim tests are recommended every 3-6 months. Increased steroids in the body will act to decrease the natural immune system resulting in a higher risk of infections. Urine test screening for infections are recommended. When the body is dealing with infections, maintaining Cushing's control is more difficult, therefore treating any infection that occurs is important.

Prognosis

Adrenal dependent Cushing's disease has the potential for a surgical cure with excision of the affected adrenal gland if the tumor has not yet invaded into the local blood vessels. The more common pituitary dependent Cushing's disease requires lifelong medication to manage the disease.



It can be scary to learn of a diagnosis of Cushing's disease in a loved pet. Your veterinary team at Nanaïmo Veterinary Hospital wants to work with you to help improve your pet's quality of life. We want to work together to help you maintain the bond you have with your pet. We are here to support you and your pet along this journey.

Please contact us with any questions or concerns that you may have at 250-758-3985 or by email at nveth@shaw.ca