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Canine Hyperadrenocorticism [Cushings]

What is Cushing's Syndrome/Hyperadrenocorticism?

Human beings, dogs, cats, and almost all other species of animals naturally have Cortisone in their blood and in every tissue of their bodies. This Cortisone is produced by a small pair of glands called the *adrenal glands*, one located near each kidney. These are controlled by the pituitary gland at the bottom of the brain. In appropriate quantities, Cortisone is necessary for health. Too much Cortisone in the system causes chronic illness. This is Hyperadrenocorticism.

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What causes too much Cortisone in the system?

Too much Cortisone in the body can occur because of a tumour and occasionally because of overuse of steroids. Most dogs and cats with naturally occurring Cortisone excess (85% to 90%) have a small tumour located in the *pituitary gland*. These tumours persistently send a "message", in the form of a chemical called *ACTH,* to the adrenal glands "asking" for Cortisone production and release into the circulation. The result is that:

- Cortisol is produced in excess
- Because the signal is not turning off it can cause both adrenal glands to grow
- Eventually the Cortisol excess results in the development of Cushing's syndrome

What are the symptoms of Cushing's syndrome?

Chronic excesses of Cortisone in the system of dogs can result in a variety of symptoms. Not all dogs have the same symptoms, but most have at least two or three of the following:

1. Excess urine and excess thirst

2. Hair loss which can result in a thin hair coat or it can cause complete hair loss and a bald appearance

3. Development of muscle weakness. Muscle weakness may cause these dogs to be unable to go for long walks, difficulty jumping onto furniture, and a "pot-belly" appearance to the abdomen

4. Virtually always have an excellent appetite and some are abnormally ravenous for food

5. Often pant excessively

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What tests are needed?

In addition to owner-observed changes, veterinarians may detect additional problems such as thin skin, infections, and muscle loss. Essential initial blood and urine testing often reveals several abnormalities.

If Hyperadrenocorticism is still suspected, then specific hormone testing is performed to "confirm" this diagnosis. **The tests usually used are the ACTH Stimulation Test, the urine Cortisol Creatinine Test, and the Low Dose Dexamethasone Test (LDDST)**. Each of these tests is common and relatively effective, and each has advantages and disadvantages.

Ultrasound of the abdomen is then recommended for several reasons:

- 90% of adrenal tumours can be visualized with ultrasonography
- Adrenal glands in dogs with the pituitary form of Cushing's undergoing ultrasound examination are either normal (~50% of the time) or enlarged (~50% of the time)
- Ultrasonography is also used to assess the body cavity for both expected changes such as big liver, fat accumulation and unexpected problems

What treatment is needed?

Based on test results, your veterinarian may recommend surgery or oral drugs to attempt to treat the natural form of Cushing's syndrome. The surgery is not easy and is often best attempted by a specialist. Oral treatment involves use of potentially toxic agents but can be managed successfully at home with regular blood testing and vet visits.

Successfully managed dogs, regardless of the recognized treatment chosen, far exceed the treatment failures. Owners are strongly encouraged to consider treating their pets. Treated dogs have a relatively normal life and for this reason, correction of this condition is usually suggested.

Untreated dogs tend to be weak, abnormally addicted to food and water, and generally not happy, playful, or active. Eventually, chronic Hyperadrenocorticism patients will develop any combination of heart disease, diabetes, urinary tract infections, skin infection, pancreatitis, kidney disease and blood clots in the lungs – all of which cause suffering.

Monitoring the treatment is essential.
6 monthly check ups and blood tests are required to adjust dose rates as needed.