Hyperadrenocorticism - Cushing's Syndrome

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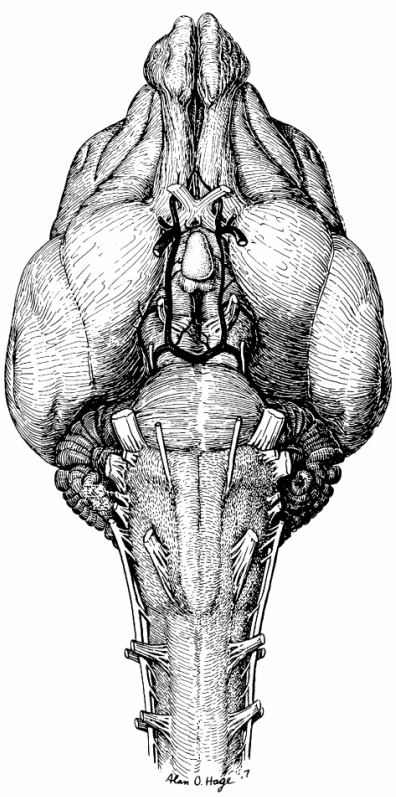
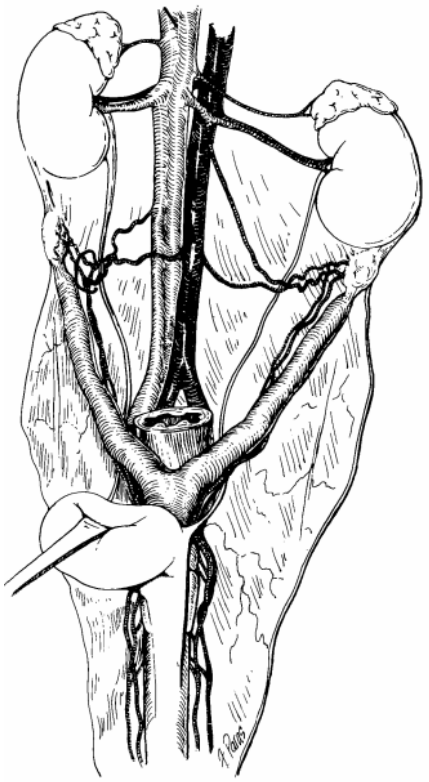
What is Cushing's Syndrome?





Hyperadrenocorticism (Cushing's syndrome) refers to a clinical condition which results from having excess cortisone concentration in the body. A minority of dogs with this disease have a tumor in one of the two adrenal glands that produce cortisone. Your pet, like more than 80% of the dogs with the naturally acquired form of this disease, has a tumor at the base of the brain in an area called the pituitary gland. The pituitary gland controls adrenal function. A tumor in the pituitary gland can result in excessive cortisone throughout the body resulting in so called "Pituitary Dependent" Cushing's Syndrome .

The most common signs seen with hyperadrenocorticism include excessive urination, excessive drinking, increased appetite, hair loss, muscle weakness, a "potbellied" appearance, panting, thin skin and lethargy. Virtually all dogs with Cushing's syndrome have at least one of these signs, but it would be uncommon to have all of these signs.

Diagnosis

Cushing's syndrome can only be diagnosed using blood tests. These tests include, but are not limited to: complete blood count (CBC), full chemistry panel, urinalysis, urine culture, and adrenal function tests (low dose and high dose dexamethasone suppression test, and possibly ACTH stimulation test). These tests in combination with the physical signs will assist in a diagnosis of Cushing's syndrome. **It is important to understand that false positive adrenal function tests are common when another disease having clinical signs that mimic hyperadrenocorticism is present.**

Ultrasound is only occasionally helpful to aid in the diagnosis of Cushing's syndrome, but it is extremely valuable to help rule out other reasons for the patient's clinical signs. Bladder stones, urinary tract infection, tumors of the liver or spleen, chronic inflammatory liver disease, gall bladder disease, or gastrointestinal disease are some of the diseases that may present similarly. Adrenal enlargement may not be readily imaged by ultrasound because of patient movement or interference because of gas in the overlying intestine. In general, ultrasound is an insensitive indicator of adrenal disease. Magnetic resonance imaging (MRI) is the preferred, but expensive, diagnostic imaging procedure to evaluate the adrenal glands.

Hyperadrenocorticism - Cushing's Syndrome Continued...

Treatment

There are currently two main drugs that are used to treat Cushing's disease in dogs. The first is a drug that was developed during WWII. During this time scientists performed research using the insecticide DDT in an attempt to create an extremely toxic form. One of the forms of DDT created was o,p'-DDD (drug names: mitotane, Lysodren), a chemical that can destroy the cortisone-producing cells of the adrenal gland in dogs. The other medication, called Trilostane, works to also decrease the amount of cortisone produced by the adrenal glands, but does so by inhibiting specific steps in cortisone production. When used under the correct circumstances and when dogs on these medications are monitoring appropriately, both Mitotane and Trilostane can be very effective at treating and controlling the signs of Cushing's disease. Ask your veterinarian about which drug may be most effective for your dog.

The administration of Mitotane varies greatly from that of Trilostane. Mitotane must be given in a controlled manner for an "induction" period. The medication should be given immediately after eating as the drug is absorbed best from a stomach containing food. This will also help decrease the chance of your dog having an upset stomach. You may also be asked to give the drug in a divided dose - half in the morning and the other half in the evening - with meals. You may notice a decrease in appetite during the induction phase. If your dog's eating or drinking stops, contact your veterinarian immediately and stop the medication. If vomiting or diarrhea develops you should also contact your veterinarian and stop the medication. After the induction phase, you will be asked to bring your dog in to the hospital to have an ACTH stimulation test done. This test "stimulates" the adrenal gland. If the mitotane has done its job, the adrenal gland will not over-react to the stimulation. The results of this test will help your veterinarian determine a starting maintenance dose of mitotane for your dog. This test can be done on an out-patient basis.

Trilostane does not require an induction phase as Mitotane does. However, small adjustments to the dose of Trilostane are often needed early in treatment, and over the life of your dog, other changes may be made based on routine monitoring of blood tests and how well the clinical signs of Cushing's disease are being controlled. Trilostane may also need to be administered up to twice per day for the rest of your dog's life.

Either medication will be continued for the rest of your dog's life, though the dose may need to be periodically readjusted. Recheck ACTH stimulation tests initially need to be done as often as monthly until control of excessive cortisone production is achieved. Thereafter, testing will be needed at regular intervals determined by the control achieved with your pet. Close observation and frequent veterinary rechecks can only help in the long-term management of your pet.

Cushing's disease is an expensive condition to manage due to medication costs and the need for frequent blood monitoring. With good follow-up and periodic monitoring of adrenal function, the prognosis is good. In pets with inadequate follow-up and monitoring, the disease often relapses and severe illness or death may occur because of complications resulting from poorly regulated hyperadrenocorticism.