

I'm writing this article because Cushing's disease (correctly called Cushing's syndrome) is an endocrine disorder of middle aged and older dogs that is often over diagnosed. Over diagnosed is a euphemism for "your dog never had it in the first place".

There are two problems to contend with. First, tests that determine whether your dog has Cushing's disease are expensive and can be unreliable. The second problem is that one commonly used drug to treat Cushing's, Lysodren, will quickly destroy your dog's adrenal glands and only compound the problem created by an incorrect diagnosis of Cushing's disease. So it's important that we fully understand this disease.

### **What is Cushing's Disease?**

Cushing's disease is the result of the overproduction of cortisone by the adrenal glands in dogs. In a normal everyday situation, your dog's pituitary will respond to stress by producing a compound called ACTH, which stimulates his adrenals to produce more cortisol/cortisone. In Cushing's disease, abnormally high levels of cortisone hormone is continually being produced by the dog's adrenal glands.

Cushing's disease results from three possible situations. In the first scenario, a dog will have a microscopic benign tumor of the pituitary gland. This tumor overproduces ACTH thereby stimulating the adrenal glands (tiny glands the size of a pea located on each kidney), to produce too much cortisone. About 85% of Cushing's cases in dogs are due to a pituitary tumor.

In the second scenario (about 15% of dogs), Cushing's disease is caused by a tumor in the adrenal gland that's busy secreting too much cortisol. The last scenario occurs when a veterinarian prescribes excessive steroids as a medication. With the advent of NSAIDS (non steroidal anti-inflammatory drugs), the incidence of this is waning.

Let's start at the very beginning, using a typical experience that might very well happen to you and your dog. Let's name your imaginary dog Spot. Spot is over six years old and you take him in for his annual examination. He gets his annual Wellness Profile: a blood test. Spot has none of the symptoms of Cushing's disease. He's not drinking a lot or urinating a lot and doesn't have a sagging, bloated, pot-bellied appear-

*Thoughts on*

# CUSHING'S DISEASE

By Deva Khalsa DVM



ance or excess panting. He's not extra hungry or stealing food, has not gained weight and he's not weak on his hind legs having no loss of muscle mass. His coat is beautiful and thick with no thinning of his fur and he has no areas of pigmented skin. He never gets an infection.

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Spot has one thing and one thing only and his veterinarian takes note of this: an elevated liver enzyme called alkaline phosphatase. If it's two the three times the normal range, Cushing's disease is often pegged as the likely problem. It's important to note that any disorder causing endogenous stress can cause a high alkaline phosphatase in dogs. But because Cushing's disease seems to be on every veterinarian's mind these days, a number of screening tests are recommended in an effort to diagnose Cushing's disease.

These tests (referred to as screening tests) are relatively reliable if performed on a dog that has signs and symptoms as well as laboratory abnormalities suggestive of Cushing's. However, if these same tests are recommended for animals that are not showing these signs and symptoms, then false positive results can occur. In addition, these tests are done at the veterinary hospital, often when the dog is caged, and the stress of hospitalization alone may cause a false positive result. Even the suggestion that a dog will wind up at the vet's office is enough to tip the scales and start the dog's adrenals working overtime)

Allow me to preface this next section by telling you that there are ways to diagnose Cushing's disease more accurately and I'm going to tell you how I do this in my practice. However, I first want to give you the latest and best information on the tests available to diagnose the disease.

### **Testing for Cushing's disease**

Because of its sensitivity, many veterinarians consider the Low Dose Dexamethasone Suppression Test the best option. The problem with this test is it gives too many false positive results. As I said before, the stress the dog is undergoing will have a definite influence on the test results. Being locked in a cage and having blood drawn is definitely enough stress to create a false positive test. Another test, the ACTH Stimulation Test is a popular screening test for reasons unknown. In general, this kind of test would be used for hypofunction and not hyperfunction of the adrenal glands. This test misses many animals that have the disorder - typically 20% to 30% of dogs with pituitary abnormality and 50% with an adrenal tumor. Both of these tests should only be used on animals that have the clinical signs consistent with the disease and these are all the signs I mentioned above that Spot didn't have.

There is an excellent test you can do on your dog's urine called a Cortisol-Creatinine Ratio Test. This test is very useful for ruling out Cushing's disease; it has an accuracy rate of 90%. The urine has to be taken at home and the dog has to be unstressed to the point that it should not even be intimidated that he might be going to the veterinarian's office later on that day! When you bring in your dog's urine sample for this test, you can also ask the veterinarian to do a urine specific gravity. A urine specific gravity of less than 1.025 is consistent with Cushing's disease, while dogs with a urine specific gravity greater than 1.025 are less likely to have Cushing's.

So let's look at this scenario. Spot has none of the signs and symptoms of Cushing's disease. He has a high alkaline phosphatase. His cortisol-creatinine ratio is elevated. What do you do? The best thing to do is to find a specialty clinic that has a radiologist who does ultrasounds. Ask for a full abdominal ultrasound and have the doctor check and size both adrenals. If they are normal in size, and your dog has none of the symptoms, it's very likely your dog doesn't have Cushing's disease.

### **What about Atypical Cushing's Disease?**

There's another misunderstanding called Atypical Cushing's disease. I'm convinced that a dog diagnosed with Cushing's without corresponding symptoms does not have the disease. While there is such a thing as Atypical Cushing's disease, it's not what most people think it is.

About ten years ago, veterinarians at the Royal Veterinary College in England observed dogs that had all the classical signs of Cushing's disease. These dogs were drinking a lot of water. They were urinating a



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lot and had a urine specific gravity below 1.025. They had a pot bellied appearance, muscle wasting and weakness in the hind legs. They had ravenous appetites and excessive panting. But their Low Dose Dexamethasone Suppression test and ACTH Stimulation tests came back normal. And they all got better on Lysodren. So the vets in the UK did some excellent research and found out that every one of these dogs had an elevated sex steroid called 17-hydroxyprogesterone, and this was thought to be a marker or possibly the cause of all the symptoms of Cushing's disease. These dogs with Atypical Cushing's disease had all the symptoms of the disease but a different hormone was causing these symptoms.

It's important to know all the facts about Cushing's disease. While this disease is presently being diagnosed at earlier stages, a dog should still have some of the symptoms of the disease along with a low urine specific gravity to consider Cushing's disease. Both Trilostane and Lysodren are detoxed by the liver (in fact it is clearly stated that Trilostane should not be given to a dog who has kidney or liver disease), and there is no reason to place an animal with a liver problem and not Cushing's Disease on either of these drugs. The most accurate, safe and effective method of diagnosing Cushing's disease is the Cortisol-Creatinine Ratio on an unstressed urine followed by an ultrasound.

In an effort to bring you the very best information on Cushing's syndrome I spoke with Dr. Rhett Nichols, a world renowned expert in endocrinology and a consultant for the Animal Endocrine Clinic. He said, "I believe these tests are reliable if used properly. A major point that should be made is that any screening test for any disease should only be applied to a population of animals/people where it is likely they have the disorder based on history, physical exam findings, and lab work. If a screening test is applied to animals where the disorder is unlikely, false positives (outliers) are going to occur. Bottom line? The screening tests are not bad, but their use in certain situations (e.g., high ALP with no clinical signs, sick animals with no signs consistent with Cushing's) is questionable."

## Holistic Options

What if your dog really does have Cushing's disease. Is there anything holistic that you can do? I've used homeopathic ACTH with some slight success and Chinese herbs with great success. The most effective Chinese herbs I've used for Cushing's disease, from the Chi Institute of Chinese Medicine, are Rehmannia 11, Rehmannia 14, Ophiopogon Powder and Liver Happy. You can get these herbal combinations from a variety of Chinese herb companies.

I apologize for the rather clinical disposition of this article. I wanted you to know the facts and understand how the testing procedure for Cushing's disease works so you can save unnecessary expense and worry if your dog starts experiencing Spot's scenario. Both pickles and Cushing's disease can make one thirsty but there's no need to be in a pickle with Cushing's. 🐾

*Since beginning her holistically oriented veterinary practice over 25 years ago, Dr Khalsa has been incorporating homeopathy, acupuncture, Chinese Herbs, nutritional advice, allergy-elimination techniques such as NAET and also JMT into her approach. Dr. Khalsa is a Fellow and Professor of the British Institute of Homeopathy.*



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