

## Cushings Disease

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

Cushing's disease is a disease in which the adrenal glands overproduce certain hormones. The correct medical term for this disease is hyperadrenocorticism. The adrenal glands produce several vital substances which regulate a variety of body functions and are necessary to sustain life. The most widely known of these substances are cortisol which is commonly and incorrectly known as 'cortisone'. Either deficient production or excessive production of these substances may be life threatening.

### **How does this disease occur?**

There are three mechanisms by which this disease can occur. Regardless of the cause, the clinical signs are essentially the same. It is important to identify the cause, however, because the various forms are treated differently and have different prognoses.

#### **1. Iatrogenic**

Iatrogenic Cushing's disease means that the excess of 'cortisone' has resulted from excessive administration of synthetic cortisones. This may occur from oral or injectable medications over a long period. Although the injections or tablets were given for a legitimate medical reason, their excess is now detrimental. Occasionally use of ointment containing cortisone or its derivatives over a long period of time can result in excessive intake due to absorption through the skin or eyes or to the dog licking the product.

#### **2. Adrenal gland tumour**

Cushing's disease may be the result of a benign or malignant tumour of the adrenal gland. If benign, surgical removal cures the disease. If malignant, surgery may help for a while, but the prognosis is less favourable than for a benign tumour.

#### **3. Pituitary gland tumour**

The most common cause of Cushing's disease (85% of all cases) is a tumour of the pituitary gland. The tumour may be either benign or malignant. The tumour causes the pituitary to overproduce a hormone which stimulates the adrenal glands. This results in excessive cortisol secretion. The tumour may be either microscopic or quite large. Depending on the size of the tumour, the presence of signs other than Cushing's will be variable. Generally, if the activity of the adrenal gland can be controlled, the dog will live a relatively normal life. Unfortunately, this is sometimes not the case. However, many dogs with this form of Cushing's disease can live normal lives for many years as long as they take their medication and stay under close medical supervision. Growth of the pituitary tumour would give the patient a less favourable prognosis.

### **What are the clinical signs?**

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The most common clinical signs associated with Cushing's disease are a tremendous increase in appetite, water consumption, and urination. Lethargy, or lack of activity, and a poor hair coat are also common. Many of these dogs develop a bloated appearance to their abdomen due to an increase of fat within the abdominal organs and a stretching of the abdominal wall as the organs get heavier. The pot-bellied appearance also develops because the muscles of the abdominal wall becomes weaker. The skin frequently appears paper thin. Panting is another common finding with this disease.

## **How is it diagnosed?**

A number of tests may be necessary to confirm a diagnosis of Cushing's disease and further tests may be needed to decide which form of the disease is present. All these tests involve taking blood samples, sometimes at timed intervals. Although some of these tests are expensive, they are necessary for a definitive diagnosis. Sometimes an ultrasound examination may be required to eliminate the possibility of an adrenal tumour.

## **What are the treatment options?**

### **1. Iatrogenic Cushing's Disease**

Treatment of this form requires a discontinuation of the 'cortisone' that is being given. This must be done in a very controlled manner so that other consequences do not occur. Unfortunately, it usually results in a recurrence of the disease that was being treated by the 'cortisone'. Because there may have been adverse effects on the adrenal glands, treatment is also needed to correct that problem.

### **2. Adrenal Tumour**

Treatment of an adrenal tumour requires major surgery. Although this surgery is not without risk, if it is successful and the tumour is not malignant, there is a good chance that the dog will regain normal health. We have also used Trilostane for these cases when surgery is decided against due to age and risk.

### **3. Pituitary Tumour**

Treatment of the pituitary-induced form of Cushing's disease is with Trilostane. We have excellent results but treatment does need to be monitored to ensure over-dosage causing low levels cortisol does not occur. This would lead to Addisons disease.

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