CUSHING'S DISEASE

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Cushing's disease or hyperadrenocorticism occurs when the adrenal glands produce excessive amounts of cortisol/endogenous steroid. The **most common cause** is a **functional, but benign, tumor of the pituitary gland** in the brain. This gland secretes a hormone (ACTH) that stimulates the adrenals to produce and secrete cortisol. When a functional tumor is present, the pituitary secretes ACTH in excess and over-stimulates the adrenals. These pituitary tumors typically do not metastasize/spread. A primary problem with one or both adrenal gland(s) can also be the cause, but is far less common. Generally, pituitary tumors are small and do not cause local issues in the brain, but occasionally they can be large and cause compression of surrounding brain tissue, resulting in neurologic signs.

This disease is **relatively common in dogs** and uncommon in cats. Middle-aged to older dogs are usually affected. Both sexes are equally affected. **Many breeds** (large and small) can develop Cushing's disease, but poodles, dachshunds, most terriers, German shepherds, beagles and Labrador retrievers may be at an increased risk. The **most common clinical signs include**: lethargy; increased drinking and urination; increased appetite; panting; apparent abdominal distension; hair loss, especially over the back.

Several complications that may arise from uncontrolled Cushing's disease exist. The most common are high blood pressure, congestive heart failure, diabetes mellitus, lung/respiratory disease (pulmonary thromboembolism/PTE), pancreatitis and various kidney diseases. Animals with one or more of these complications can become emergencies with life-threatening issues. Thus, Cushingoid patients should have routine medical check-ups and be assessed on an emergency basis, if any abnormalities become apparent.

Routine blood work can raise clinical suspicion of Cushing's disease, such as elevated cholesterol and alkaline phosphatase/ALKP; however, a definitive diagnosis requires more specific blood testing. The two blood tests of choice are the **ACTH stimulation test and the low-dose dexamethasone suppression (LDDS) test.** A LDDS test is often useful to differentiate pituitary from adrenal based Cushing's. Adrenal based disease may also be detectable on abdominal ultrasound, if the adrenal tumor is large enough for visualization.

Treatment of Cushing's disease relies on destruction of a sufficient amount of adrenal tissue to bring cortisol levels into the normal range or range where signs are no longer apparent. The drug approved for this is **Lysodren.** If an adrenal tumor is determined to be the cause, surgical excision would be necessary. Other drugs are listed

in the literature for the treatment of Cushing's (ie. Trilostane), but are not yet available in the U.S. or not yet approved by the FDA.