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Feline Hyperthyroidism

What is Hyperthyroidism?

Hyperthyroidism is a condition characterized by increased production of thyroid hormone (thyroxine) from the thyroid glands. It is one of the most common disorders of older cats. The thyroid glands in cats are a pair of structures located on either side of the trachea in the neck. Thyroid hormone performs many functions in the body related to metabolism. Too much thyroid hormone increases metabolism, while too little decreases metabolism. The pituitary gland, near the base of the brain, is responsible for producing thyroid stimulating hormone (TSH), which stimulates the thyroid gland to produce thyroid hormone.

What causes Hyperthyroidism?

Hyperthyroidism is caused by a tumor of the thyroid gland, which produces excessive amounts of thyroid hormone, even without stimulus from the pituitary gland. This tumor is almost always benign. Hyperthyroidism is most common in older cats (>8 years old). Risk factors for hyperthyroidism may include genetic, nutritional and environmental factors.

What are the Clinical Signs of Hyperthyroidism?

Clinical signs may include:

- Weight loss despite strong/increased appetite
- Restlessness/hyperactivity
- Increased vocalization
- Increased drinking and urinating
- Chronic intermittent vomiting/diarrhea
- Heat avoidance
- Panting
- Decreased grooming

How is Hyperthyroidism Diagnosed?

On physical exam, hyperthyroid cats often have a poor body condition and unkempt hair coat. They may have a heart murmur and/or arrhythmia and may develop hypertension (elevated blood pressure). An enlarged thyroid gland may be felt during the physical exam. A general blood panel may reveal abnormalities associated with hyperthyroidism including elevated liver enzymes. A definitive diagnosis of hyperthyroidism is made by measuring total thyroxine (T4) levels in the blood. If T4 is significantly elevated, hyperthyroidism is diagnosed. If T4 is borderline and hyperthyroidism is suspected, further testing such as free T4 by equilibrium dialysis, a T3 suppression test, or rechecking T4 levels at a later date may be required. Other tests that may be performed on hyperthyroid patients include blood pressure measurement, radiographs (x-rays) and an echocardiogram.

How is Hyperthyroidism Treated?

Several treatment options for hyperthyroid cats exist. These include treatment with medication to suppress thyroid hormone production, radioactive iodine therapy, iodine-restricted diet therapy, and surgery.

- Medication – a medication called methimazole is given twice daily either orally or transdermally to suppress thyroid hormone from the abnormal thyroid tissue. If transdermal application is elected, care must be taken by the owner to avoid skin contact with the medication. Occasionally vomiting, anorexia and lethargy may occur with this medication. Other rare side effects including itching of the head/neck, liver damage, anemia, decreased white blood cell count and decreased platelet levels.
- I-131 therapy – an injection of radioactive iodine is given to the patient, which destroys the abnormal thyroid tissue. This treatment is only performed at certain licensed facilities and the patient must be isolated in the hospital after treatment typically for 2-3 days. This treatment is potentially curative and may eliminate the need for future medication.
- Iodine-restricted diet – patients are fed an iodine restricted diet which is intended to reduce T4 levels to the proper range. If this treatment is used, the patient must eat only this diet, which can be problematic especially in multi-cat households.
- Surgery – a surgery called a thyroidectomy is performed to remove abnormal thyroid tissue. Surgery is potentially curative and may eliminate the need for future medication. However it may not be possible to remove all abnormal tissue, or currently normal tissue may become abnormal resulting in a recurrence of hyperthyroidism after surgery. This is rarely the elected treatment.

It is important to note that older cats are often prone to hyperthyroidism as well as other conditions including chronic kidney disease. Treatment for hyperthyroidism may unmask kidney disease that was asymptomatic prior to treatment for hyperthyroidism. For this reason, medical treatment with methimazole should be instituted initially even if more definitive treatments such as I-131 therapy or surgery are elected later. That way, if kidney disease does develop the medication can be discontinued.

A general blood panel including T4 levels should be assessed 2 weeks after beginning medical treatment for hyperthyroidism or adjusting medication dosages, and then every 6 months there after.

What is the Prognosis with Hyperthyroidism?

The prognosis of cats with hyperthyroidism is generally good with adequate treatment. Patients treated with I-131 therapy or surgery may be cured with no further treatment needed. Patients treated with methimazole or iodine-restricted diet will require life-long treatment, however they can generally live normal lives.