

## Hyperthyroidism in cats

Hyperthyroidism is a common disease that generally affects middle aged to older cats. It is caused by overactivity of one or both thyroid glands in the neck. This is usually due to a benign growth within the thyroid gland tissue, but occasionally this may be a cancerous growth that can act in an aggressive manner.

### Clinical signs

- Weight loss despite increased (or ravenous) appetite
- Vomiting and/or diarrhoea
- Restlessness / excess vocalisation / prickly nature
- Cold seeking
- Poor hair coat
- Tremors / weakness
- Panting
- Increased heart rate and high blood pressure

### Diagnosis

Your vet may suspect hyperthyroidism based on the above clinical signs and sometimes an enlarged thyroid gland is palpable in the neck. A definitive diagnosis is based on a blood test that measures the level of total thyroid hormone (TT4). It is also important to run a baseline blood test to check for other conditions such as diabetes, kidney disease or liver disease.

### Treatment

Whenever possible, hyperthyroid cats should be stabilised with medical treatment initially (usually in tablet or oral liquid forms). This allows us to re-assess kidney function once the cat is stabilised as hyperthyroidism can disguise kidney disease. Long term management can either be continuation of medical management or a permanent solution (surgical intervention or radioactive iodine).

### **Medical management:**

Medications come in liquid or tablet forms and are given once or twice daily. The thyroid gland(s) continue to produce too much thyroid hormone, but the medication counteracts the hormones so they do not cause clinical signs.

The advantages of medical treatment are that there is no need for an anaesthetic or visit to a specialist facility. Treatment can begin straight away and upfront costs are lower.

The disadvantages are that the cat is never cured, medication must be given lifelong. The dose of medication needed is likely to change over time so cats on treatment should be reassessed (including blood tests to measure TT4) every month until they are stable, and every 3 months thereafter. Some cats will not tolerate medication administration which can be stressful for the cat and owner so medical management is not always a good option. There are also rare cases of side effects from the medication (e.g. digestive upsets, itchy skin and changes in blood cell levels) which we need to monitor for.

Over many years the abnormal thyroid gland may become increasingly abnormal so that medication no longer works, or the thyroid gland may become cancerous.

**Radioactive iodine:**

Administration of radioactive iodine is an excellent treatment option as it is curative without being dependent on the location of the overactive thyroid tissue in the body (10-20% of cats have overactive thyroid tissue located elsewhere including in the thoracic cavity). A single injection of a radioactive iodine compound is given to the cat. The thyroid tissue takes up the compound and the thyroid cells die. The cat does not require a general anaesthetic or surgery and the hyperthyroidism should be permanently cured. Cure rate is around 95%.

The disadvantages of radioactive iodine are the high up-front cost (average £2575). Only specialised facilities can offer this service so cats will need to travel to one of these clinics (the closest to us are the Royal Veterinary College at Potters Bar and Anderson Moores in Hampshire). The cat will need to stay in an isolation facility at the clinic for 9-14 days to reduce radiation exposure to humans. Once the cat goes home there are continued restrictions on close contact with the cat and disposal of soiled litter etc.

Most clinics require cats to have a thorough medical check-up before going to the radioactive iodine facility. This often includes additional bloodwork, urine tests, blood pressure measurement, ultrasound scans and x-rays. These tests can be carried out at Brelades or at the radioactive iodine clinic.

Radioactive iodine is so effective that it can cause cats to have an underactive thyroid gland after treatment. This can cause weight gain, poor coat condition and lethargy. In these cases, thyroid supplementation will need to be given (an oral liquid medication) once or twice daily. This may be temporary or lifelong.

In middle aged cats with no underlying disease, this is nearly always the recommended way of managing hyperthyroidism, if the costs and practicalities of this treatment choice can be met.

**Surgery:**

This involves surgical removal of the affected gland(s). This is commonly performed in general practice and will often be curative. However, cats have two thyroid glands, and it isn't possible to know whether one or both glands are affected until the surgery is performed. Around 65-75% of cats have both glands affected.

If one gland is removed there is a risk of disease recurrence if the other gland becomes affected later and a second surgery will be required to remove the second gland. If both thyroid glands are removed simultaneously then there is a risk of damaging the parathyroid glands (as they are wrapped around the thyroid glands), causing low calcium levels, which can be a medical emergency. An abnormally low thyroid level (hypothyroidism) can also occur in cats who have had both glands removed, and this can require supplementation.

Surgery can be performed at Brelades Vets in Dorking. If only one gland is removed then cats can often go home on the same day. If both glands are removed then we may recommend cats stay in for a few days so that the calcium levels can be monitored and treated if needed.

The disadvantages of surgery are that it involves a general anaesthetic, which can be a risk in these patients. In very rare cases the nerves to the larynx may be damaged so severely that the cat develops breathing difficulties (this is usually only if the thyroid gland is cancerous and has grown into the nerve).

Surgery to remove both glands has an 80-90% cure rate as 10-20% of cats have additional hyperactive thyroid tissue within the thoracic cavity. Surgical removal of just one gland only has a 30-60% cure rate as the second gland can become overactive.

If surgery is successful and there are no complications, cats with hyperthyroidism can be cured with a single procedure in a cost-effective way (compared to medical management or radioactive iodine treatment).

#### **Diet:**

Thyroid glands need a supply of iodine to produce thyroid hormone. If a cat with hyperthyroidism is fed a diet that is extremely low in iodine, they will not be able to produce high levels of thyroid hormone and this may result in adequate control of hyperthyroidism.

Hills Y/D diet is formulated to be iodine deficient but otherwise nutritionally balanced. This diet will need to be fed as the sole food to cats along with low-iodine water (in some cases this will need to be bottled water). No other treats, foods or liquids like cat milk can be given for this option to be successful.

The advantages of this option are that there is no surgery, general anaesthetic, specialist stay or medication needed. The main disadvantage is that the cat must eat only this diet for the rest of its life – if it does not like the diet or is likely to go outside and eat other things, the diet will not work. 83% of cats that eat the diet alone will have their hyperthyroidism controlled. Because the abnormal thyroid glands continue to grow over time, the condition may worsen or the abnormal tissue may become cancerous over time.

#### **Complications**

If hyperthyroidism is left untreated there are significant complications that may develop. High blood pressure may develop which can cause retinal detachment resulting in blindness. In the long-term, kidney damage and severe weight loss are also possible consequences, as well as heart failure and death. Prompt diagnosis and treatment of hyperthyroidism should reduce the risk of these complications and result in a successful outcome for your cat.

#### **Insurance**

If your cat is covered by a lifetime cover insurance policy, the hyperthyroidism treatment should be covered for the rest of your cat's life (if the policy is renewed). If your cat is covered by a time limited insurance policy, treatment will be covered for 12 months after diagnosis so it may be advantageous to consider one of the permanent methods of treatment whilst the cat is still insured.

#### **Summary**

There are multiple choices for the treatment of hyperthyroidism and all have advantages and disadvantages. We hope the above information and discussion with your veterinary surgeon will help you to choose the best option for you and your cat's individual circumstance and needs.

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