

Introduction

Your cat was diagnosed with hyperthyroidism (excessive production of thyroid hormones, mostly caused by a benign thyroid tumor).

For this condition, you can choose between 3 different treatment options: lifelong medication, surgical removal of the affected thyroid gland(s) (*thyroidectomy*), or treatment with radioactive iodine.

Why would you choose radioactive iodine treatment for your cat?

1. Anti-thyroid medication has to be given for the rest of the cat's life. It can be difficult to give the cat his pill every day (sometimes even twice a day). It is necessary to have your cat's blood checked regularly, to evaluate and monitor the cat's condition and thyroidal state. These medications can cause serious side-effects in some cats, such as liver problems, gastro-intestinal complaints (vomiting, diarrhea), automutilation (scratching,...) bone marrow suppression, ...Treatment with medication will not cure the thyroid, but will suppress the symptoms and clinical signs.
2. Surgical treatment can be effective, but there are some serious disadvantages to it. Hyperthyroid cats often have concurrent cardiac problems, which means that they are not good candidates for an extensive anaesthesia – needed for a thyroidectomy. When removing both thyroid glands, it is possible that the adjacent parathyroid glands will be removed as well. This can cause additional problems, such as shortage of calcium, that need to be treated with medication as well. In some cats, additional hyperactive thyroid tissue is present in the chest ("ectopic tissue"), which can not be seen nor removed

surgically. Also, very small pieces of thyroid tissue along the esophagus will be difficult to remove.

3. The main advantage of radioactive iodine treatment consists of the fact that your cat can be treated with one injection that results in a complete cure in 95% of the cases, without the disadvantages or side effects as described above. Ectopic thyroid tissue will be treated as well. The main disadvantage is the requirement of a 5 day hospitalisation period for radioprotective reasons.

How does radioactive iodine work?

1. Iodine (necessary for a normal, healthy life) is transformed in the thyroid gland into thyroid hormones. These hormones will help the cat's metabolism to work properly. An excess of these hormones will cause different clinical signs and symptoms, as you may have noticed in your cat (weight loss, increased appetite, hyperactivity,...). This condition may also be toxic for heart and kidneys.
2. Radioactive iodine is iodine that has been made radioactive. When the iodine transforms from its radioactive state to its normal, non-radioactive state, it will produce radiation. Two types of radiation can be seen: the first allows us to visualize it with a gamma-camera, and thus we can trace the uptake of iodine in the thyroid gland(s) (these are gamma-rays); the second type of radiation does not leave the thyroid gland (Beta particles), and this will destroy the abnormal tumoral cells in the thyroid gland that cause the hyperthyroidism. The radioactive iodine that is not taken up by thyroid tissue will leave the cat's body through urine and feces.

What do we do?

1. The cat will be given the injection through a catheter that has been placed in a vein of one of the front legs. When the cat does not allow us to place a catheter, we can administer it subcutaneously.
2. The cat will be monitored during its 5 day hospitalisation period. We will check the uptake of the radioactive iodine in the thyroid gland by performing a post-therapeutic scan with a gamma-camera.
3. The amount of radioactivity emitted by the cat will be measured daily with the aid of a dose-rate measuring device, at a distance of 1 meter.
4. The duration of hospitalisation depends on the rate at which the radioactive iodine is being excreted from the body, and on the decrease of radioactivity the cat emits (hence the daily measurements of dose-rate). In normal circumstances cats will be allowed to return to their homes 5 days after treatment (admission is on Mondays, most cats go home on Friday). When the cat shares a house with young children or pregnant women, we advise an extra fortnight of hospitalization.

What do you have to do?

1. You have to make an appointment at the Department of Medical Imaging 0032-(0)9-264.76.50 (dr. Eva Vandermeulen, DVM Veerle Volckaert or dr. Kathelijne Peremans) or through mail (e.vandermeulen@ugent.be, veerle.volckaert@ugent.be, or kathelijne.peremans@ugent.be).
2. Your referring veterinarian needs to do a complete blood analysis of your cat within the month before treatment. Make sure to have the kidneys and liver checked, as well

as the glucose level and thyroid hormone level.

3. Prior to the treatment the diagnosis needs to be confirmed with a pertechnetate scan. This can be done at the Department of Medical Imaging of our Faculty, and is mostly done on the day of the treatment.
4. Make sure your cat is fasted when she comes to us (i.e. no food from the evening (22h00) for treatment; water is allowed).
5. You can bring a pillow or blanket with a familiar smell for your cat. Keep in mind that it is not always possible to return it when it is too contaminated (urine,...).
6. Bring some food that your cat likes best. Some cats can be picky about our food.
7. If your cat is being treated with anti-thyroid medication, you will be asked to take your off of these pills 14 days prior to treatment.
8. Please inform us if your cat is taken medication for other reasons (e.g. heart problems...), and bring these medications with you.

What to do when your cat is back home?

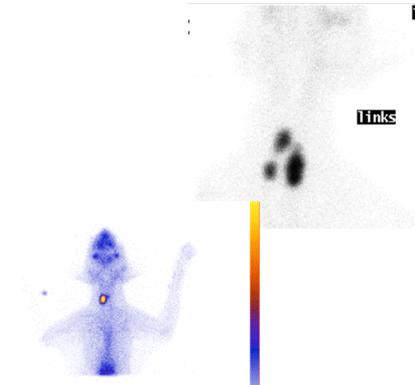
1. Try to keep some distance from your cat during the first 14 days after returning home. This means do not have your cat sleeping on your bed, or on your lap, etc. A short period of cuddling or petting is allowed, but it is advised to wash your hands thoroughly afterwards.
2. If your cat uses a litterbox, you will need to collect the contents of the first 14 days. Store them separately in a plastic bag or box during 3 months after treatment, preferably in your garage, basement,... . After this three month period you can put it with your regular garbage. Use disposable gloves when cleaning the litterbox and put them in this separate bag / box.
3. We suggest you take your cat to the vet's for blood analysis at 1, 3 and 6 months after treatment, for a check-up of the thyroid hormone and kidney values. Please keep us informed of these results!

If you have any questions **specifically related to the radioiodine treatment**, feel free to contact dr. Kathelijne Peremans (kathelijne.peremans@ugent.be, department of Medical Imaging – Nuclear Medicine Division).



Veterinary Nuclear Medicine

Information on radioactive iodine treatment in hyperthyroid cats.



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