



## **Feline Acromegaly: Pituitary Tumors in Cats**

### **What is feline acromegaly?**

Acromegaly is a syndrome in cats caused by a tumor in the brain (specifically the pituitary gland) that secretes an excess of a hormone (Growth Hormone, GH). The hormone excess leads to development of insulin-resistant diabetes mellitus and enlargement of tissues such as the liver, heart, and jaw.

### **Does my cat have acromegaly?**

- Acromegaly is most commonly seen in older (>10 years old) neutered male cats that have insulin-resistant diabetes mellitus. However, cats of any age or sex can develop acromegaly.
- Common symptoms associated with insulin resistance include weight loss (despite a good appetite) and increased thirst and urination. Acromegalic cats also develop changes in their appearance such as enlargement of the jaw, paws, and abdominal organs. Hypertrophic cardiomyopathy (changes in the heart muscle) can also occur and can sometimes lead to heart failure.
- The diagnosis of acromegaly is made with a blood test (IGF-1 levels) and then confirmed with a CT (CAT) scan and/or MRI (enlargement of the pituitary gland is seen).

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

For most cats, the recommended treatment is radiation therapy.

- Stereotactic radiation therapy (SRT, also commonly referred to as SRS, SBRT, radiosurgery and/or Cyberknife-type therapy) is the newest and most convenient treatment available for feline acromegaly.
- It uses advanced radiation technologies to deliver treatment with extreme accuracy and precision. That allows for high radiation doses in the tumor, while the nearby important organs (e.g. eyes, brain surrounding the tumor) receive much lower doses of radiation than the tumor.
- Pituitary tumors that cause acromegaly are usually treated in 1 treatment session; occasionally, more than one session will be recommended. Fractionated radiation (typically 15-20 daily treatments) may also be a consideration in some cases, in facilities where SRT is not available.
- The treatments are given under general anesthesia, but they are non-invasive, and non-painful. There is no recovery period and in most cases, your cat will go home the same day as the treatment. Anesthesia is used simply to keep your pet from moving during this high-precision procedure.
- Not all cats are candidates for this treatment. For example, if your cat is in heart failure as a result of the acromegaly, he/she may not be a candidate for the anesthetic episodes required for treatment.

## **What is the prognosis?**

The prognosis for feline acromegaly varies, and can be very difficult to predict for an individual cat.

- In most studies, at least 2/3 cats had improved symptoms, and 50-92% had improved control of their diabetes. The average cat survived 25 months after SRT (meaning that half of the cats lived a longer time and half lived a shorter time).
- The bottom line is that most cats will have improvement in their diabetes. However, even with improvement, many cats will need to continue taking at least some insulin, forever. Management of the diabetes will remain an important part of your cat's care.
- It is important to know that the time it takes to see improvement in diabetic control is highly variable.
- Some cats will see benefit within a couple months of SRT. In other cats, it will take a year or more!

## **Are there any alternatives to radiation therapy?**

Medical management options have been reported, but are not in widespread use. The goal of these drugs is to decrease the secretion of Growth Hormone. Consultation with a veterinary internal medicine specialist would be the first step if you're interested in discussing the most current medical management options.

## **What risks are involved with SRT?**

Most cats tolerate this treatment very well and have few, if any, side effects.

- A rare complication is blindness, which would happen months to years after SRT.
- Another rare side effect is hypothyroidism. The symptoms of hypothyroidism are vague, but can include lack of energy, weight gain, matting of fur, and seeking warmth. A simple blood test can be used to diagnose this condition. And treatment is also simple, involving a medication usually given as a pill.

After SRT, the most important thing is to work with your veterinary team to carefully monitor blood sugar levels and diabetic control. Proper and timely adjustment of insulin doses is critical.

## **How much does it cost?**

The total cost is different for each patient. Treating feline acromegaly with SRT involves:

- Establishing the fact that your cat has insulin resistance and/or clinical signs suggestive of feline acromegaly, and the presence of increased IGF-1 blood levels
- Initial consultation with a radiation oncologist
- Tests to help map out the treatment, including a CT (CAT) scan and MRI of the brain
- Treatment planning, performed by the radiation oncologist
- Quality assurance testing performed by a medical physicist
- Anesthesia and treatment delivery

The total cost for radiation treatment planning and delivery is usually between \$4,500 and \$6,500. It may be higher if your radiation oncologist recommends any additional tests. These costs do not include ongoing management of the diabetes mellitus. And, all fees are also subject to periodic review/change by hospital administration.

## Facts about radiation therapy

Performed on an outpatient basis.

- Patients typically arrive at the hospital in the morning. Families are called and come pick their pet up after they have received that day's treatment. This is often in the afternoon.
- If you are coming from a distance, talk with our nursing staff to discuss the logistics of having your pet board at the hospital during radiation therapy.

Short-term side effects are usually mild and temporary.

- New radiation technologies and techniques have revolutionized treatment of brain cancers (including pituitary tumors that cause feline acromegaly), allowing for a non-invasive approach to treatment that has few, if any, short term side effects.

Long-term side effects are possible, but quality of life is usually very good.

- The treatment may cause injury to the surrounding brain tissue and the nerves associated with the eyes. Rarely, this could result in blindness or neurologic abnormalities such as seizures months-years after SRT.
- It is also possible that your cat's hair coat could change color (on the head only), and this could be permanent.

## About Us

**Board-Certified Radiation Oncologists:** Veterinarians on faculty at NC State College of Veterinary Medicine who have extensive training in cancer diagnosis/management, and radiation therapy. The radiation oncologists directly oversee all activities relating to your pet's cancer care.

**Radiation Oncology Residents:** Veterinarians who are training to become radiation oncologists.

**Medical Physicists:** Physicists who assure the safe and effective delivery of radiation to patients.

**Radiation Therapists:** Allied health professionals who operate radiation therapy equipment and deliver treatments.

**Nursing Staff:** Licensed veterinary technicians assist the radiation oncologists and therapists in almost aspects of your pets cancer care, and are a vital part of the team.

**Anesthesiology Staff:** Our anesthetists are licensed veterinary technicians who work with board-certified veterinary anesthesiologists to make sure your pet is as safe as possible while anesthetized for radiation therapy.

**Hours:** 7:30am to 4:30pm, Monday through Friday

**Consultations:** Call (919.513.6690) or visit our reception desk to make an appointment.

**Scheduling:** Your radiation oncology team will work with you to develop a plan, but we generally ask that patients are:

- Dropped off between 7:30 and 8:30am (except Wednesdays, when it is 7:30am - 8:05am, or 9:15am - 9:45am)
- Picked up by 4:30pm