

## Thyroid masses/tumors

### Overview

Thyroid growths in dogs and cats can be benign (adenoma) or malignant (carcinoma). Benign growths tend to get larger and may produce excess hormones (less common for malignant disease); malignant growths will also spread to other parts of the body.

### Symptoms

Dogs may have no symptoms or may develop a lump in the neck region. If the mass compresses the windpipe (trachea), these dogs may present with difficulties breathing or coughing. If the mass is pressing on the esophagus your dog may gag or have difficulty swallowing. Although the majority of canine tumors are malignant, they rarely produce excessive hormones that are associated with clinical signs of hyperthyroidism.

Cats normally present with clinical signs associated with hyperthyroidism including weight loss, increased appetite, drinking and urination, diarrhea, increased activity, panting, a lump in the neck region, weakness and heart changes.

### Exam and Diagnosis

A physical exam and general diagnostic procedures will be performed during your pet's initial work up prior to surgery to establish a preliminary diagnosis for hypercalcemia, evaluate your pet's overall health and the size and invasiveness of the tumor.

The most common procedures performed are:

- *Laboratory analyses*: Blood work to include Complete Blood Count, Serum Chemistry,
- *Imaging*:
  - Thoracic Radiography (X rays), or thoracic CT to look for metastatic disease
  - CT Scan (or ultrasound) of the neck
  - Abdominal Ultrasonography or abdominal CT to look for metastatic disease
  - MRI (rare)
- *Histopathology* of a surgical tissue sample (systematically done after surgical removal)

### Treatment Options

Surgical removal is the treatment of choice for thyroid masses.

#### *Surgical procedure*

During surgery, your pet will be fully anesthetized (general anesthesia) and a skin incision and approach made along the underside of the neck to look at both thyroid glands, as well as local lymphnodes and remove the abnormal looking glands/nodes.

#### *Risks and complications*

Complications specific to removal of thyroid tumors include:

- bleeding. The thyroids lie close to large vessels, and some tumors create a lot of extra blood vessels. In some cases, bleeding might be severe enough to need a blood transfusion.

- Seroma formation, or swelling at the surgical site
- Laryngeal Paralysis - Damage to the recurrent laryngeal nerve, which is responsible for movement of the larynx (upper airway cartilages) during breathing and swallowing. This can be transient or permanent.
- Tumor recurrence, or development of metastatic disease after surgery
- Anesthetic risks: There are always risks associated with general anesthesia. Risks can be increased by other health issues of your pet and any concurrent disease he/she may have.

**In-hospital care**

We will closely monitor your pet in hospital for local swelling and/or bleeding postoperatively.

If both thyroid glands are removed, we will start supplementation with vitamin D and calcium similar to parathyroid removal surgery, as well as thyroid hormone supplementation. An intravenous catheter will be placed that will allow us to take frequent blood samples to monitor calcium levels while your pet is in the hospital. Some pets will need supplementation of vitamin D and calcium to maintain their calcium within safe blood levels.

**At home care**

After surgery your pet may have a soft bandage around their neck. You should avoid putting any leashes or collars around your pet's neck until he/she has healed from surgery and the sutures are removed (usually 10-14 days). During this time period you should keep your pet's activity limited.

Calcium checks (in case of removal of both thyroids): Your pet's calcium levels will need to be checked several times during recovery, and medications (vitamin D) and or calcium supplementations might be needed on regular intervals to prevent hypocalcemia. It is very important that you asked your local veterinarian specifically about checking the IONIZED calcium (calcium free in the blood stream). That may requires going to an Emergency Clinic as not every hospital might have the equipment needed to measure this in-house. Alternatively, we can schedule your rechecks through the Purdue VH Soft Tissue Surgery Service. Based on the ionized calcium levels (whether measured at the PUVH, or relayed to us via your veterinarian) we will start to taper medications, in the hope that the remaining glands will take over hormone production and being able to discontinue medication supplementation for your pet. However, every pet is different: some might not need supplementation, some might take days, weeks or months to taper off the medications, and some might never fully get off the supplementation.

**Prognosis**

Depends on the histologic diagnosis of the tumor, and the specific prognosis for your pet will be discussed with you after the pathology results become available.