

Thyroid Tumors

Associated Terms: thyroid carcinoma, hyperthyroidism

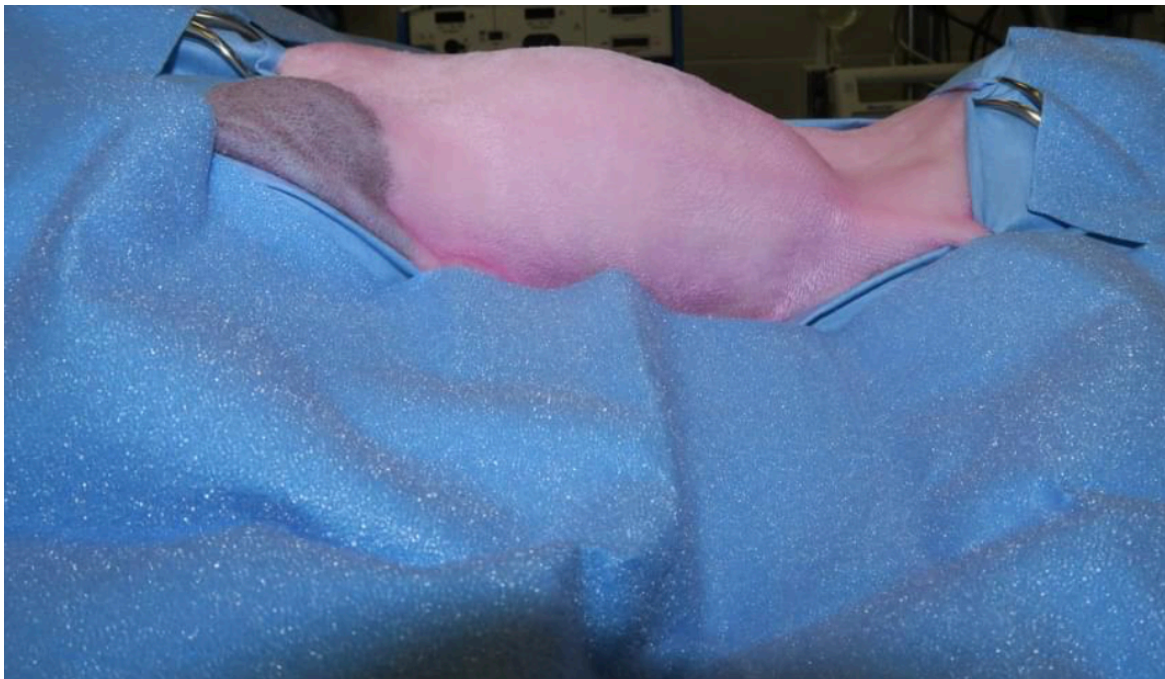
OVERVIEW

The thyroid glands are paired structures located along the windpipe (trachea), about halfway down the neck of dogs & cats. The thyroid glands are responsible for producing hormones that are vital for normal body function.

Benign VS Malignant

Thyroid growths in pets can be benign (adenoma) or malignant (carcinoma). Benign growths tend to get larger & may produce excess hormones; malignant growths can also spread to other parts of the body. While benign tumors of the thyroid gland (adenomas) are common in cats, the majority of dogs have malignant tumors. Thyroid tumors are commonly seen in middle aged to older large breed dogs such as boxers, beagles, golden retrievers & Siberian huskies.

CLINICAL SIGNS & SYMPTOMS



Preoperative appearance of the ventral neck mass.

Pets with thyroid tumors may have no symptoms or may develop a lump in the neck region. If the mass compresses the windpipe (trachea), these pets may present with difficulties breathing or coughing. If the mass is pressing on the esophagus your pet may gag or have difficulty swallowing. Some pets may have a change in their bark, weight loss, or loss of appetite. Although the **majority of canine tumors are malignant, they *rarely* produce excessive hormones that are associated with clinical signs of hyperthyroidism**, such as:

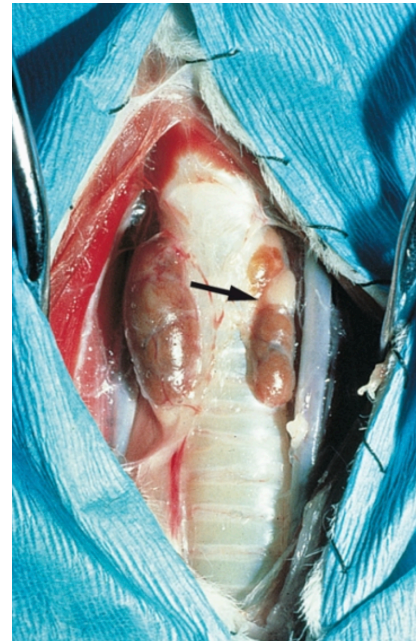
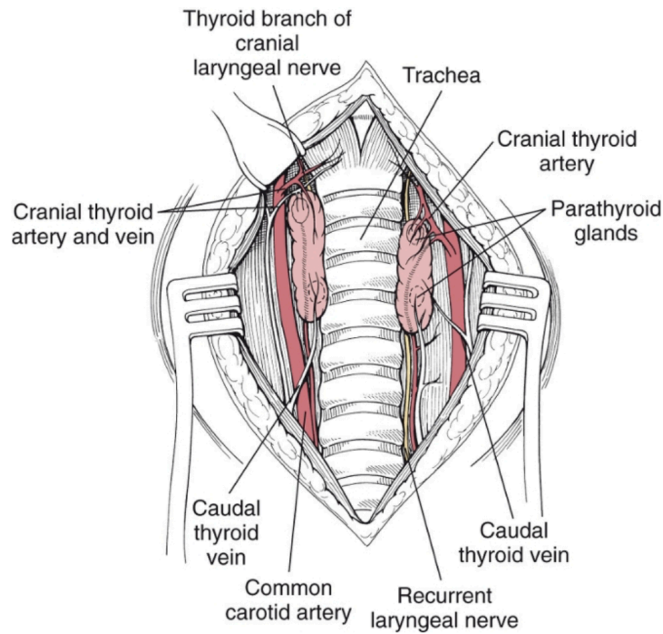
- Drinking & urinating more than usual
- Increased appetite
- Hair coat abnormalities
- Restlessness
- Weight loss

Thyroid tumors can occasionally be found in a location in the neck away from the normal thyroid glands or in rare situations even under the tongue or in the chest.

DIAGNOSTICS

Thyroid masses occasionally cause neck swelling which can be seen on radiographs (x-rays) but other imaging techniques such as ultrasound or computed tomography (CT) scan are better for assessing the size & invasiveness of the tumor. Definitive diagnosis is based on microscopic examination of a tissue sample. Due to the highly vascular nature of the tumor, coagulation parameters should be considered & assessed using blood clotting tests prior to biopsy or surgery.

Additional testing is usually performed before surgery to stage the tumors. Chest x-rays or CT, abdominal ultrasound & blood work are used to investigate whether there is evidence of thyroid hormone production or metastasis (spread of the cancer) & assess other organ function.



TREATMENT (medical vs surgery)

Removal of these tumors can be difficult because the tumors can invade local blood vessels or other tissues. Because tumors that are large or invasive can be difficult to remove, referral to a veterinary surgeon is indicated for any large or fixed tumors. Radiation or chemotherapy is often recommended for masses that are incompletely resected or are too large for surgical removal.

Radioactive iodine (I-131) treatment has been shown to be an effective adjunct to the treatment on thyroid tumors. I-131 can be utilized in patients that are poor surgical candidates or in patients where vascular invasion has been identified in spite of surgical removal.

Pathologist review of the removed tumor is important to determine if these additional treatments (chemotherapy, radiation therapy or I-131 treatment) would be beneficial for your pet's pathologic evaluation of the removed tissues may include special stains (immune-histochemistry) that helps veterinarians tailor follow up treatment of the tumor.

AFTERCARE & OUTCOME

After surgery your pet may have an adhesive bandaid (called Primapore) with topical antibiotic ointment underneath & +/-soft bandage around his neck. You should avoid putting any leashes or collars around your pet's neck until they have healed from surgery, ~10–14 days. Use a body harness for walking your pet instead. During this time period you should keep your pet's activity limited. The wound must not be interfered with or bathed. If bleeding or ooze is seen, advice should be sought. Please contact your primary veterinarian & if unable please contact your veterinary surgeon. The wound under the neck usually heals very well. Skin sutures (if applicable) can be removed at 2 weeks post-operatively with your pet's follow-up.

Careful observation & supervision is advised for the 1st few days in your pet that have had both thyroids removed, to watch for the development of tremors or seizures. We advise that your pet are kept under veterinary &/or close supervision for this observation period (24 hour facility) when both thyroids have been removed.

Follow the advice of your veterinary surgeon regarding medications that may be needed for your pet after surgery. If both thyroid glands are removed, your veterinarian may need to check your pet's calcium levels several times during recovery because some parathyroid tissue is removed with the thyroid glands (parathyroid glands are involved in calcium regulation).

Surgical removal of thyroid tumors has the best outcome if the mass is freely moveable, <4cm in size, non-metastatic & can be completely removed. Long-term survival (1 to 3 years) may be achieved in pets, depending on histologic features observed by the pathologist & early diagnosis prior to local invasion or metastatic (spreading) disease. Patients treated with surgery & follow-up I-131 radiative treatment have an average survival of ~34 months.

MEDICATIONS

Your primary veterinarian will go over medications to be take at home at the time of discharge. Antibiotics may be given on case to case basis. Anti-inflammatory & analgesia (anti-pain) & +/-sedation (only if needed) were be prescribed. Thyroid hormone supplementation & +/-calcium supplementation are unlikely require in most thyroidectomy.

COMPLICATIONS (possible)

There are always risks associated with general anesthesia. Complications specific to removal of thyroid tumors in pets include bleeding or damage to the recurrent laryngeal nerve, which is responsible for movement of the larynx (upper airway cartilages) during breathing & swallowing. Pets that have both thyroid glands removed may experience low calcium (hypocalcemia) or low thyroid hormone levels (hypothyroidism) which require treatment with medication. Finally, there can be some mild swelling of the incision on the neck after surgery.

After removal of 1 thyroid gland, the other one may develop problems & need removing at a later date. You will be familiar with the signs of over production of thyroid hormone (hyperthyroidism) when you see them for the 2nd time! ~2% of cats with hyperthyroidism have a cancerous condition of the thyroids & this will obviously worsen the prognosis.

Some cats & +/-rarely in some dogs have marginal kidney function before surgery. Kidney issues can be “unmasked” post-surgery-operatively when the cat’s blood pressure becomes normalized. Pre-operative blood tests endeavour to spot poor kidney function in advance of surgery.

Occasionally pets that have had both thyroid glands removed develop low calcium levels in their blood soon after surgery, because of damage to their parathyroid glands which are located next to the thyroid glands. The signs of this complication are tremors & sometimes seizures. Medically management of this complication with calcium & vitamin D is usually successful, but it is a serious complication that can involve a lot of time, effort, commitment & expense in controlling.

If you have any questions, please feel free to ask your primary veterinarian &/or veterinary surgeon.

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