



Thyroid Tumors

Associated Terms:

Thyroid Carcinoma, Hyperthyroidism



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Your ACVS board-certified veterinary surgeon completed a three-year residency program, met specific training and caseload requirements, performed research and had research published. This process was supervised by ACVS Diplomates, ensuring consistency in training and adherence to high standards. After completing the residency program, the individual passed a rigorous examination. Only then did your veterinary surgeon earn the title of ACVS Diplomate.

Overview:

The thyroid glands are paired structures located along the windpipe (trachea), about halfway down the neck of dogs and cats. The thyroid glands are responsible for producing hormones that are vital for normal body function. Thyroid growths in dogs can be benign (adenoma) or malignant (carcinoma). Benign growths tend to get larger and may produce excess hormones; malignant growths can also spread to other parts of the body. While benign adenomatous changes of the thyroid gland are common in cats, the majority of dogs have malignant neoplasia. Thyroid tumors are commonly seen in middle aged to older large breed dogs such as boxers, beagles, golden retrievers, and Siberian huskies.

Signs and Symptoms:

Dogs with thyroid tumors may have no symptoms or may develop a lump in the neck region (Figure 1). 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**, such as:



Figure 1. This dog's neck has been shaved in preparation for surgery; its head is to the left.

- restlessness
- increased appetite
- weight loss
- hair coat abnormalities
- drinking and urinating more than usual

The large thyroid masses (blue arrows) caused the neck to appear swollen.

Diagnostics:

Thyroid masses occasionally cause neck swelling on radiographs (x-rays) but other imaging techniques such as ultrasound or computed tomography (CT) scan may be better for assessing the size and 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, blood clotting tests should be assessed prior to biopsy.

Your primary care veterinarian will likely also recommend that your pet have additional testing performed to investigate whether there is evidence of thyroid hormone production or metastasis (spread of the cancer).

Treatment:

Removal of these tumors can be difficult because the tumors can invade local blood vessels or other tissues (Figure 2). Because tumors that are large or invasive can be difficult to remove, referral to an ACVS board-certified 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.



Figure 2. This thyroid tumor grew down into the jugular vein, one of the major vessels that drains blood from the head. Tumor cells released into this blood vessel can spread to the lungs; however, this 10-year-old dog lived for 2 years after surgery without any signs of illness.

Aftercare and Outcome:

After surgery your dog may have a soft bandage around his neck. You should avoid putting any leashes or collars around your dog's neck until they have healed from surgery, usually 10-14 days. During this time period you should keep your dog's activity limited and follow the advice of your veterinary surgeon regarding any medication that may be needed after surgery. If both thyroid glands are removed, your veterinarian may need to check your dog's calcium levels several times during recovery.

Surgical resection of the tumors has been associated with the best response if the mass is freely moveable, less than 4cm in size, nonmetastatic (has not spread) and can be completely removed. Long-term survival (1 to 3 years) may be achieved in dogs, depending on histologic features and early

diagnosis prior to local invasion or metastatic (spreading) disease. Patients treated with surgery and follow-up I-131 treatment have an average survival of 34 months.

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

This Animal Health Topic was written by and reviewed by Diplomates of the American College of Veterinary Surgeons. Any opinions stated in this article are not necessarily the official position of the American College of Veterinary Surgeons.

The American College of Veterinary Surgeons recommends contacting an ACVS board-certified veterinary surgeon or your general veterinarian for more information about this topic.

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