

SURGERY – Anal Sac Tumors

Definition

Tumors of the anal sacs (apocrine gland anal sac adenocarcinomas or AGASACAs) arise from the glandular lining and are malignant tumors with a high incidence of invasiveness and metastasis to local lymph nodes, even when the primary tumor is still very small. Hypercalcemia of malignancy is also associated with this tumor which can lead to renal failure. The reported rate of metastasis is variable, but in most studies the metastatic rate is around 70% at diagnosis, and over 90% with time.

Signalment and Clinical Signs

Anal sac tumors are found in male and female dogs and can occur in any breed. The average age at presentation is approximately 10 years. Clinical signs may be associated with the primary tumor or with renal disease resulting from hypercalcemia. These tumors can also be incidentally found during routine rectal exams when no clinical signs are present.

Clinical signs associated with the primary tumor:

- Constipation
- Pain when defecating
- Straining to defecate
- Blood in stools

Clinical signs associated with kidney failure from high blood calcium:

- Lethargy (weak or tired)
- Loss of appetite
- Vomiting
- Increased water intake
- Increased urinations

Diagnosis



Figure 1: The anal sac adenocarcinoma has spread to the abdominal lymph nodes just under the spine (large arrows) compressing the colon downward, increasing the risk of constipation.

If a mass is felt in the area of the anal sac, fine-needle aspiration with cytology can help to determine if cancer cells are present. Local ultrasound examination of the anal sac/mass can also be performed as a primary diagnostic test (anal sac tumors have very specific vascular patterns on color-flow Doppler views) or to assist with FNA. If anal sac carcinoma is suspected or confirmed, abdominal ultrasound and thoracic radiographs should be performed to rule out gross metastatic disease to the lymph nodes or lungs. Blood chemistries and urine are tested to check for hypercalcemia and any evidence of kidney damage, since high blood calcium and subsequent kidney failure are associated with poor survival rates in animals with anal sac tumors. Hypercalcemia of malignancy (high calcium as a result of hormones secreted by the tumor) is detected in approximately 25% of dogs with anal sac carcinoma.

**Treatment**

Although a variety of treatment combinations have been reported, surgery is the only method that has been proven to influence survival of dogs with anal sac carcinomas. Surgery includes removal of the primary tumor and if enlarged, the sublumbar lymph nodes, which are affected by metastatic disease in 50-70% of dogs. In addition to surgery, and because of the high metastatic rate, multimodality treatment is the ideal way to go when possible. Most oncologists recommend radiation and chemotherapy in an attempt to prolong survival of affected dogs. Due to the highly invasive nature of anal sac carcinomas and the possibility that aggressive surgical removal may lead to fecal incontinence, radiation is commonly used when complete (clean) surgical margins cannot be achieved. Animals that present with hypercalcemia may need to be treated before surgery with intravenous fluid therapy, diuretics (to increase urine production), and corticosteroids or bisphosphonates to decrease blood calcium concentrations. Because of the invasive nature and location of these masses, referral to a board certified surgeon is recommended.

Potential Complications of Surgery

Surgical removal of large masses may lead to fecal incontinence. This may only be temporary, but clients need to be aware of this problem. Infections after surgery are uncommon. Dogs that have kidney damage from high calcium before surgery may continue to have kidney problems postoperatively.

Prognosis

In a recent study of dogs with anal sac adenocarcinoma, overall median survival was 18 months; however, prognosis and survival depend on factors such as the type of treatment, size of the mass, and presence of hypercalcemia and metastatic disease. Median survival is poorer in dogs with tumors larger than 4 inches (median survival, ~9.5 months), hypercalcemia (median survival, ~8.5 months), and spread to the lungs (median survival, ~7.5 months). Gross metastasis with enlargement of the sublumbar lymph nodes significantly lowers the quality of life in these pets due to the constipation/obstipation issues. Surgical debulking/removal of these lymph nodes can be performed at the same time as the primary tumor excision in an attempt to improve quality of life, and is the best option to reduce the tumor to microscopic disease when pursuing adjuvant radiation and chemotherapy. Prognosis with surgical excision alone has reported median survival times of 12 months. When either adjuvant chemotherapy or radiation therapy is added post-surgery, the median survival time extends to about 18 months. Median survival times of 24-36 months have been reported when surgery, radiation therapy, and chemotherapy are combined.

Questions?**Surgical Experts:**

Jim Boulay, DVM, MS, DACVS
Barb Gores, DVM, DACVS
Sharon Shields, DVM, DACVS

The Veterinary Specialty Center of Tucson has board-certified surgeons available for questions and consultations on surgical conditions during the weekdays. A member of the surgery team is on-call 24/7 to provide consultations to VSCT emergency doctors and to perform emergency surgery for patients seen by the VSCT emergency service. Board-certified surgeons have four additional years of training and are certified by the American College of Veterinary Surgeons to assure competency in advanced veterinary surgery.