



## **APOCRINE GLAND ADENOCARCINOMA OF THE ANAL SAC**

### **What is anal sac adenocarcinoma?**

Anal sac adenocarcinoma is a relatively common malignant cancer in dogs. It arises from the apocrine glands of the anal sac and is considered an aggressive cancer based on its high potential for local invasion and metastasis. Any breed can be affected; however, it may be more common in German Shepherd Dogs, Golden Retrievers, and Cocker Spaniels. Affected dogs are typically older with an average age of 10 years. Both males and females seem to be equally affected. The cause of anal gland adenocarcinoma is unknown.

### **What are the symptoms?**

Symptoms of anal sac carcinoma are variable, but may include swelling of the perineum, licking or biting at the perineum, scooting, perianal bleeding or blood in the stool, change in size or character of stools, and/or straining to defecate. Often, the patient shows no signs, and the mass is simply found on a rectal examination, especially with small to medium-sized masses. Approximately 25% of dogs with anal sac carcinoma will have associated hypercalcemia (elevated calcium level in the blood). Patients with hypercalcemia may present for lethargy, decreased appetite, vomiting, constipation, increased drinking and urination, or weakness.

### **How is it diagnosed?**

Examination will often reveal a palpable mass in the anal sac. Fine needle aspiration and/or biopsy is ultimately necessary for definitive diagnosis. Routine blood work, including complete blood cell count and serum biochemistry, is important to assess your dog's overall health and evaluate for tumor-associated calcium elevation. Approximately, 50% of dogs will have metastasis to the sublumbar lymph nodes at the time of diagnosis. Therefore, it is important to evaluate the lymph nodes with abdominal ultrasound, and if abnormalities are seen, ultrasound-guided lymph node fine needle aspirates are often recommended, so that the cells can be evaluated by the clinical pathologist. Chest x-rays are important to evaluate for any distant metastases to the lungs. Occasionally, especially for very large masses, a CT scan may be recommended in order to evaluate the feasibility of surgery, to evaluate the lymph nodes, and to help plan radiation therapy.

### **How is it treated?**

#### **Surgery**

Surgical excision of the primary tumor is indicated. Because these tumors are generally locally invasive and are located in a difficult area of the body, wide surgical excision is often not possible, especially if fecal continence is to be preserved. If there is evidence of metastasis to the sublumbar lymph nodes, these should generally also be removed. Removal of the lymph



nodes is performed via an abdominal incision. Removal of the lymph nodes may be difficult, and may increase the risk of intraoperative bleeding. Because of the local invasion and high metastatic potential for anal sac carcinoma, adjunct therapy such as radiation and/or chemotherapy is typically also warranted in addition to surgery. For patients with hypercalcemia, removal of the primary tumor and/or metastatic lymph nodes will often result in decrease or normalization of the blood calcium. Monitoring of the calcium postoperatively is important in these patients, as return of hypercalcemia usually signals recurrence and/or metastasis of the tumor, and associated clinical signs of elevated calcium can interfere with your pet's quality of life.

### **Radiation Therapy**

Radiation therapy is indicated in many patients for improved control of the local tumor and treatment of the regional lymph nodes (sublumbar lymph nodes). Radiation therapy may be used as definitive curative-intent therapy after surgery for incompletely or narrowly excised tumors or for palliation of large non-resectable tumors and/or lymph nodes. General anesthesia is required for each radiation treatment. Please see the radiation handout for more detailed information.

### **Definitive Radiation Therapy**

Definitive radiation therapy is used for patients with incompletely or narrowly excised tumors that have no evidence of lymph node enlargement or for patients whose enlarged lymph nodes have been surgically excised. The intention of definitive radiation therapy is to eliminate any residual microscopic disease present after surgery. The lymph node bed is often treated in addition to the surgical scar from primary tumor excision. Treatment is performed Monday through Friday daily for approximately 16 to 18 fractions (doses). Side effects include radiation skin reactions in the perineum, inflammation/irritation of the rectum (proctitis), and inflammation of the colon (colitis) resulting in straining to defecate and/or diarrhea. These effects are typically transient and will resolve within 2-8 weeks following completion of therapy. Chemotherapy is often combined with radiation therapy (see below).

### **Palliative Radiation Therapy**

Palliative radiation therapy is often used for patients with very large anal sac masses or sublumbar lymph nodes, with or without removal of the primary tumor. The intent of palliative radiation therapy is to at least temporarily decrease the amount of tumor present and therefore improve the quality of your pet's life. Radiation therapy is performed daily for 5 consecutive days to the lymph nodes and to the primary tumor or surgical scar. Chemotherapy is also sometimes used in combination with palliative radiation therapy (see below).

### **Chemotherapy**

Chemotherapy is thought to be beneficial in the treatment of anal sac carcinomas. Drugs thought to be effective include carboplatin, cisplatin, mitoxantrone, and doxorubicin.

Chemotherapy may be used as an adjuvant to surgery with or without concurrent radiation therapy. Chemotherapy is typically administered intravenously, every 3 weeks, for 4-6



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total treatments. Chemotherapy can also be used as the sole therapy, in an attempt to shrink the tumor(s) and thus palliate the disease.

Piroxicam or other nonsteroidal anti-inflammatory drugs are not true chemotherapy drugs, but are sometimes also used for treatment of anal sac adenocarcinomas for pain control, anti-inflammatory, and anti-carcinoma properties.

Your pet's oncologist will help you decide which treatment is best for your pet and family.

### **What is the prognosis?**

The prognosis for patients with anal sac adenocarcinoma is dependent on many factors, including size of the primary tumor, evidence of metastases, presence of hypercalcemia, and method of treatment. Patients tend to do best if they have small, localized tumors and normal calcium levels, and if their treatment includes surgical removal of the mass(es).

Most patients with anal sac cancer cannot be cured; however many patients can have improved survival with good quality of life with treatment. The best outcome has been seen in patients receiving multimodality therapy with combination surgery, chemotherapy, and radiation therapy, with average survival times of 1.5 years. Patients receiving palliative radiation and chemotherapy for lymph node metastases or non-resectable primary tumors will often have a decrease in size of the tumor and improvement in clinical symptoms.