



ANAL SAC TUMORS IN DOGS

Background

Tumors of the anal sacs are uncommon in dogs and very rare in cats. The anal sacs are paired glands found on either side of the anus, which are similar to the scent glands found in skunks. Apocrine gland adenocarcinoma of the anal sacs occurs at relatively low frequency in the dog, representing 17% of all perianal tumors and 2% of all skin tumors. Apocrine gland adenocarcinoma is the most common malignancy in this area in older female dogs. As with most tumors in animals and people, we do not know what causes them to occur.

Clinical Signs

The most common presenting complaints for animals with anal sac tumors are licking the hind end, scooting along the ground, or straining to defecate. Some owners may notice a mass under the tail, and some dogs may produce flat, ribbon-like stools. Occasionally, an anal sac mass may be detected during a routine physical examination. In some cases, dogs may not present for signs related to the mass, but may present with signs related to an **elevated blood calcium** level. Some anal sac tumors can produce a hormone that raises blood calcium, and this can cause some dogs to drink excessively, produce large amounts of dilute urine, or show other vague signs of illness such as poor appetite, weakness or vomiting.

Diagnosis and Initial Evaluation

When an anal sac mass is detected, one of the first steps is to obtain a ***fine needle aspirate*** or ***biopsy***. These allow a sample of the affected tissue to be microscopically evaluated and a diagnosis obtained. Many times, this may be performed with the patient awake, or using quick-acting injectable sedation.

When a diagnosis has been reached, additional tests (called ***staging***) are performed to determine if there is disease spread. The tests typically performed include ***blood and urine tests*** (looking at blood calcium level, liver/kidney function, and blood cell number), ***X-rays*** of the chest, and ***ultrasound*** of the abdomen, with special attention paid to the lymph nodes that drain the anal sac area.

Treatment and Prognosis

In those cases where surgery is possible (the anal sac tumor is not too large or invasive, and there is no evidence of any spread further than the local lymph nodes), ***surgery*** is the best treatment. Even if there is spread to the lymph nodes, these can often be removed at the time of removal of the primary mass, and the outcome can be good. The average survival time achieved with surgery alone is approximately 1 year, with dogs with

lymph node spread or high blood calcium more likely to fall short of that mark. Some dogs could have trouble with fecal incontinence following surgery – the doctor performing the

surgery should be able to estimate the likelihood of this occurring. Even if incontinence does occur to some degree, it is usually intermittent and rarely complete.

Recent preliminary evidence suggests that the addition of **chemotherapy** to surgery may improve the outcome by approximately 50%. In other words, the average survival time may reach 18 months. Chemotherapy can also be used in cases where surgery is not possible, if the tumor is too large or invasive, or if there is spread beyond the local lymph node. Most chemotherapy protocols used for this type of tumor involve a treatment once every 3 weeks. Most pets tolerate chemotherapy very well, with only a small likelihood of developing worrisome side effects (please see the handout CHEMOTHERAPY IN PETS for more detailed information about this type of treatment).

There is also evidence that a triple approach, combining surgery, chemotherapy and **radiation therapy** may result in the best outcomes, with survival times of approximately 2 1/2 years reported in preliminary studies. Radiation therapy is given in a series of daily treatments, Monday through Friday, usually for 3-5 weeks. The cost for radiation therapy, including anesthesia and hospitalization, is usually \$4,000-6,000. Please see the handout VETERINARY RADIATION THERAPY for more detailed information about this treatment.

Some animals may need additional forms of treatment to address their other signs. For example, some may need medication to help control their blood calcium level, and others may need to eat a high-fiber diet and/or take stool softeners if they are having difficulty defecating.

Following the completion of treatment, we will recommend that your pet be seen for recheck examinations on a regular schedule. A typical schedule for these rechecks would be every 3 months for 1 1/2 years, then twice yearly thereafter. A thorough physical examination (including rectal examination), chest X-rays and abdominal ultrasound are recommended at these visits. If blood calcium level was elevated at the start of treatment, this may be rechecked as well.

NASAL TUMORS

Background

Nasal tumors are uncommon in dogs and cats. The most common nasal tumors of cats are lymphoma followed by adenocarcinoma. The most common nasal tumors of dogs are adenocarcinoma followed by sarcomas. The most common tumors of the nasal planum of both cats and dogs are squamous cell carcinoma. Tumors can arise from the lining of the nose, or from the cartilage, bone, or connective tissue within the nose. Like most tumors in animals and people, we do not know why they occur. However, long-nosed dogs and dogs living in urban environments may have an increased risk of nasal tumor development.

Clinical Signs

The most common presenting complaints for animals with nasal tumors are sneezing, nasal discharge, and nosebleeds (these nosebleeds will often start in one nostril, and over time affect both nostrils). It is common for the signs of sneezing and bleeding to temporarily improve with antibiotics or anti-inflammatory drugs, but this does not signify that an infection or inflammation is the root of the problem. Some animals with nasal tumors may have other signs, such as loud, raspy breathing, swelling of the muzzle, deviation or apparent swelling of an eye, pain upon opening the mouth, or neurological signs such as seizures, behavior changes, etc.

Diagnosis and Initial Evaluation

When a pet comes in with signs of sneezing and bloody nasal discharge, a number of tests are performed. Initially, blood tests looking at overall health, and tests looking at the ability of the blood to clot properly are performed. Then X-rays of the chest and evaluation of the lymph nodes draining the nose are often performed to insure that the disease in the nose has not spread to other organs. Following that, the patient is anesthetized and some form of imaging of the nasal cavity performed. This may be additional X-rays, or a **CT scan**, a special computer-assisted test that obtains a series of very detailed X-ray images through the nasal cavity.

Following the completion of the imaging tests, a **biopsy** is obtained. Sometimes, there can be some temporary worsening of nosebleeds after the biopsy procedure. For this reason, animals may stay overnight after the biopsy procedure to insure that the bleeding is not protracted or severe. We will achieve a diagnosis in approximately 90% of the biopsies that we take (in 10%, the biopsy does not give us a clear picture as to the cause of the signs, and additional testing may be necessary).

Treatment and Prognosis

Interestingly, surgery by itself does not appear to be useful as a primary treatment for nasal tumors in animals. The treatment with the most proven track record is radiation therapy. This involves the local application of a powerful form of radiation onto the area where the tumor is located. A CT scan is performed, and the images scanned into a computer to assist in planning where to apply the radiation. The current radiation therapy

protocol for nasal tumors at the CSU consists of a total of 18-20 treatments, given Monday through Friday for 3-4 weeks. The majority of animals experience significant improvement in their clinical signs, and the average survival time is approximately 18 months. Cost for all treatments, including anesthesia and hospitalization, is usually \$4,000-6,000. Please consult the VETERINARY RADIATION THERAPY information sheet for more detailed information.

Radiation therapy may not be a viable option for all dogs or their owners. For the most common type of nasal tumor (adenocarcinoma), we have also had some success using a combination of 2 injectable chemotherapy drugs (doxorubicin and platinum) and one pill given at home (piroxicam, also called Feldene®). Most dogs receiving this treatment have experienced improvement in their clinical signs (i.e. less sneezing, less bleeding), and we have seen some animals experience significant tumor shrinkage for a long period of time.

Most pets tolerate chemotherapy very well, with only a small likelihood of developing worrisome side effects (please see the client handouts CHEMOTHERAPY IN PETS and PIROXICAM for more detailed information about these treatments). Optimally, we like to obtain a CT scan prior to starting treatment, and repeat this scan after approximately 12 weeks of treatment, to determine if the treatment is having a positive effect on the size and extent of the tumor. Further treatment is dictated by the appearance of the tumor at that time. For some owners where chemotherapy is not feasible, treatment with piroxicam alone may decrease clinical signs for a period of time.

Following the completion of treatment, we will recommend pursuing regular rechecks. A typical recheck schedule might be every 3 months for 1 1/2 years, then twice yearly thereafter. At these rechecks, we will perform a thorough physical examination, and recommend chest X-rays to rule out tumor spread. Additional CT scans of the nose may be considered as well. Eventually, most dogs will develop recurrence and worsening of their clinical signs (i.e. more sneezing, more bleeding, other signs as discussed above). Although metastasis (tumor spread to other parts of the body) is uncommon, this can sometimes be a problem eventually as well. With no treatment, the average survival time in dogs with nasal tumors is approximately 2-4 months.