



Canine Lung Tumors

Primary lung tumors are uncommon tumors in veterinary patients, primarily because dogs and cats don't smoke. While they do share our environments (and hence the consequences of our vices), as in humans, lung tumors can arise in an environment where the causes are not obvious.

Clinical signs can be coughing, exercise intolerance, gagging, and, occasionally, regurgitation. Often signs are subtle and slowly progressive. Often, these are diagnosed when chest radiographs (x-rays) are taken for an entirely different reason. These tend to be slower growing tumors and are primarily space-occupying lesions which do not cause problems until they are pressing on or invading vital organs or taking up too much lung space.

Diagnosis can sometimes be tricky because of the location. A needle sample of cells from the mass can sometimes be taken using ultrasound guidance. This is often diagnostic and the first diagnostic attempted because it is relatively non-invasive. If this is not diagnostic, a biopsy sample is attempted through surgical or thoroscopic means. Usually these tumors are carcinomas – bronchogenic, alveolar, or squamous cell. They can spread to the draining lymph nodes and to other parts of the lungs. They can seed the lining of the lungs. This can cause fluid leak, and tumor on the lining surfaces can impair the absorption of fluid from the space surrounding the lungs, leading to a condition called pleural effusion.

Surgery is usually the treatment modality first recommended for lung tumors. Prior to surgery though, we need information to determine (1) tumor spread (2) health status of the patient (3) tumor margins if not clear to determine better whether the tumor can be completely removed. To obtain this information, we recommend the following diagnostics: (1) blood work and urinalysis and (2) CT scan of the chest to evaluate the lymph nodes, the lung tissue, and the tumor margins. Abdominal ultrasound is strongly recommended as well.

Most lung tumors in veterinary patients are metastatic lesions – secondary spread from another primary site. Therefore, the abdomen should be evaluated to determine whether tumor is also present there. Other tests would be recommended as needed.

Treatment involves removal of the affected lung lobe. Because these tumors are in the chest cavity, patients are in the hospital a few days after surgery; however, most recover and go home within a few days to a week. During surgery, lymph nodes should be evaluated and biopsied or cytologically evaluated. A biopsy of the tumor is obtained by the surgeon. The information gathered will then be evaluated by the veterinary oncologist after surgery to determine whether further treatment is recommended and to recommend a monitoring schedule for each patient. Chemotherapy is sometimes recommended as a follow-up.

Usually chemotherapy is recommended for larger tumors, higher grade tumors, certain tumor types, incompletely removed tumors, and tumors with evidence of spread to lymph nodes or other sites. These are situations where tumor may grow (or regrow) quickly. The goal of chemotherapy in the follow-up (adjuvant) setting is to eradicate any residual tumor cells and/or to slow the growth of tumor cells for as long as possible.

Why? If or when the residual tumor starts to grow again, the cancer eventually will impair quality of life way beyond the risk of undergoing treatment to hopefully prevent it. Technology is not great at detecting whether a few million cancers cells remain or determining whether they will go on to cause problems, but we know from research when to anticipate when this is a really strong possibility. Those are the situations where we recommend additional treatment.

As of yet, the “gold standard” recommendation for treatment of lung tumors in veterinary patients is lacking; however, we use a treatment which usually includes a combination of medications to ensure the highest quality of life and most effective possible treatment.

Overall, studies have shown that with surgery alone, median survival time is a year or greater for most cases. Those with larger or metastatic tumors and those with clinical signs don't do as well. Dogs with good clinical indicators can live well beyond 1.5 years. With chemotherapy follow-up for the appropriate patients, we aim to improve these numbers and ensure a continued good quality of life.

Beth Overley VMD, DACVIM (oncology)