Renal Tumors in Dogs and Cats

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Primary cancer of the kidney is uncommon in dogs and cats. Metastatic cancer from other sites is more common, yet still rare. The majority of primary renal tumors are cancerous, and usually carcinomas. These include cancers such as renal cell carcinoma, transitional cell carcinoma, and anaplastic carcinoma. Other tumors that arise within the kidney include lymphoma, hemangiosarcoma, anaplastic sarcoma, and nephroblastoma. Rarely, benign tumors can form within the kidney, such as papillomas or fibromas. Renal tumors can occur in one or both kidneys. Renal cell carcinoma is the most common kidney cancer in dogs, while lymphoma is the most common renal tumor in cats. Most tumors of the kidney are seen in older animals, though renal lymphoma may be seen in younger cats, and nephroblastoma is typically seen in younger dogs. An unusual syndrome can also occur in German Shepherds consisting of bilateral renal cystoadenocarcinoma in combination with skin disease and uterine tumors in females.

Biological behavior: Renal cell and other carcinomas tend to be highly invasive into surrounding structures, including other organs and blood vessels. These tumors also are associated with a significant risk of metastasis to other regions of the body, including regional lymph nodes and the lungs. Lymphoma in cats can also affect other areas of the body, including the intestinal tract, lymph nodes, liver, and brain or spinal cord, among other locations. Nephroblastomas can grow quite large, though they have a lower chance of spreading to other areas of the body.

Kidney tumors can cause abdominal pain, blood in the urine, or non-specific signs such as nausea or vomiting, weight loss, lethargy, or abdominal distension. Some animals may also have abnormalities on routine bloodwork, particularly their complete blood count.

Diagnosis/Initial Evaluation

The initial evaluation of a dog with a suspicion of renal tumor typically involves obtaining a needle aspirate or biopsy of the affected tissues, and further diagnostics to determine the extent of tumor in other areas of the body (fine needle aspiration of lymph nodes if indicated, chest x-rays, abdominal ultrasound). Bloodwork (complete blood count and chemistry panel) and urine sampling are typically performed at the initial visit and provide important information regarding a patient's overall health and ability of the patient to handle treatment. Advanced imaging (CT or MRI) is often useful in determining the full extent of the tumor and determining appropriate treatment options. Other tests may be recommended prior to definitive treatment, such as kidney function tests.

Treatment and Prognosis

For the majority of renal tumors, the recommended treatment is surgical removal of the tumor and associated kidney. In patients where both kidneys are affected, surgery is often not feasible or indicated. Lymphoma of the kidneys is treated with chemotherapy, as this type of cancer can spread to other areas of the body. The role and efficacy of chemotherapy for other primary renal tumors have not been well established. In general, malignant renal tumors or tumors which have metastasized to or from the kidneys carry a guarded to poor prognosis, with survival times on the order of months even with treatment.

With benign tumors and some nephroblastomas, surgical removal of the affected kidney and tumor may be curative, or afford long-term survival. Prognosis is poor where both kidneys are affected, if the tumor cannot be surgically removed, or if metastasis is present.