

## **Compare and Contrast: How Feline Neoplasms Differ from their Canine Counterparts**

Dogs and cats develop many of the same neoplasms, however oftentimes they will have a different biologic behavior, prognosis, and response to therapy.

### **Mast Cell Tumors**

In dogs, the most common presentation of mast cell tumors (MCT) is cutaneous/subcutaneous; however, MCTs in cats come in three distinct syndromes that have different biologic behaviors.

#### Cutaneous

Feline cutaneous MCTs most commonly present on the head and neck, with the pinnae/ear base being a common location. Cutaneous MCTs have two histologic presentations, with one having a typical mastocytic presentation and the other having features of histiocytic mast cells. Surgery is the treatment of choice, and radiation can be considered for cases where surgery may be difficult. Strontium-90 radiation can achieve long term local control.

#### Splenic/visceral

Mast cell neoplasia is the most common differential for splenic disease in cats. Even though the spleen is the primary site, other organs can be involved as well with liver and lymph node involvement being the most common. Diagnosis can be achieved with cytology. Splenectomy is the standard of care and can still be performed even if other organs are involved. Patients treated with splenectomy +/- chemotherapy can have survival times > 2 years<sup>1</sup>.

#### Intestinal

MCT are the third most common intestinal tumor in cats (second to lymphoma and carcinoma). Metastasis is common with intestinal MCT with lymph nodes, liver and spleen being likely sites of spread. Diagnosis can be achieved with cytology of the mass, or of abdominal effusion if present. Surgery is the treatment of choice; prognosis varies with some reports showing a poor prognosis and others showing extended survivals<sup>2</sup>. Responses to chemotherapy have been promising as well.

### **Bone Tumors**

Bone tumors in cats occur with less frequency than seen in the dog, and both share osteosarcoma (OSA) as the most common bone tumor present. In cats, the most common locations for appendicular OSA are in hind limbs and it has a much lower metastatic rate than dogs. Cats develop extraskeletal OSA more frequently than dogs, and these are most often associated with vaccines/injection sites. Amputation for non-metastatic appendicular OSA is the treatment of choice and patients can have survival times >2 years without post-operative chemotherapy<sup>3</sup>.

### **Bladder Tumors**

Bladder tumors occur infrequently in cats, and like the dog carcinoma is the most common tumor type. Other bladder types reported in cats are mesenchymal in origin (leiomyosarcoma, fibrosarcoma) and lymphoma. Tumor location in cats is more varied than dogs, with only 27% being in the trigone. About 24% are in the ventral bladder wall and 17% at the apex, making many of these cases more desirable surgical candidates<sup>4</sup>.

### **Hemangiosarcoma**

Hemangiosarcoma (HSA) in the cat most commonly occurs in the skin and in visceral locations with 77% of cats having multifocal disease at the time of diagnosis. Common organs involved are liver, small and large intestine, lymph nodes, mesentery, and spleen. Surgery and chemotherapy (doxorubicin based) can be considered, and prognosis is poor with median survival time at 77 days<sup>5</sup>.

## Lymphoma

Lymphoma is one of the most common neoplasms diagnosed in cats, and unlike the dog, gastrointestinal is the most common presentation. It can present as diffuse small cell lymphoma or a high grade/massive lymphoma. Other presentations of lymphoma in cats are:

### Hodgkin's-like Lymphoma

Cats develop an uncommon form of nodal lymphoma that resembles Hodgkin's lymphoma in people. Nodal involvement is usually confined to the head and neck region, with either solitary or multiple mandibular/cervical lymph nodes involved. On histology/cytology, they are classified as T-cell rich, B-cell lymphoma. Surgery and/or radiation can be considered for treatment<sup>6</sup>.

### Nasal Lymphoma

Unlike the dog, nasal lymphoma is a common site of extranodal lymphoma in the cat. The disease is usually confined to the nasal cavity, and radiation therapy is the treatment of choice. Survival times are good ranging from 1.5-3 years for those that respond. Chemotherapy can be used as well, and those that respond can have median survival times of 2 years<sup>7</sup>.

### Renal Lymphoma

Renal lymphoma in cats can present as confined to the kidneys, or more commonly will present with lymphoma in other locations as well (GI, lymph nodes, etc.). Typically, there is bilateral involvement, and ultrasonographic appearance shows hypoechoic subcapsular thickening. Diagnosis can be made with cytology, and survival times are poor (about 6 months) with chemotherapy<sup>7</sup>.

## References

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