

FELINE MAMMARY TUMORS

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BACKGROUND

Mammary tumors are the third most common tumors in cats after lymphoma and skin tumors. Incidence of mammary tumors in cats is approximately half of that in dogs. Siamese cats have been reported to have twice the risk of mammary tumor development compared to any other breed of cat. The average age at first detection is 10-11 years. The majority of affected cats are intact females but the disease occasionally affects spayed females and male cats as well. Similar to dogs, a recent study has shown that the age at which ovariohysterectomy is performed is a strong predictor of mammary tumor development in the cat. Cats spayed prior to 6 months of age had a 91% reduction in the risk of mammary tumor development compared with intact cats. Those cats spayed prior to 1 year of age had an 86% reduction in risk. Regular administration of progestins has been associated with a significantly increased risk of malignant and benign mammary tumors in the cat.

CLINICAL SIGNS

Cats with mammary tumors are often presented to the veterinarian for a mass noted in the mammary chain. Masses are usually firm, nodular and invasive. Frequently there is adherence to the overlying skin and underlying abdominal wall. At least 25% of patients have ulcerated masses. More than 50% of affected cats have more than one gland involved wither by direct extension or the presence of multiple tumors.

STAGING AND DIAGNOSIS

Most mammary tumors in cats are in an advanced state of development at the time of initial presentation to a veterinarian. A through work up including CBC, chemistry, urinalysis, and thoracic radiographs should be taken prior to any therapeutic measures. Regional lymph nodes should be evaluated by fine needle aspiration or biopsy.

Because of the high degree of malignancy a preliminary biopsy is not recommended unless it will change the owner's willingness to treat the cat. Tissue for histopathologic diagnosis can be submitted at the time of mastectomy.

TREATMENT

The success of surgery is often hindered by the invasive nature of these tumors. Aggressive surgical resection of the entire mammary chain on the affected side is recommended because this method significantly reduces the chance of local tumor recurrence. This procedure is used regardless of the size of the tumor.

If bilateral mastectomy is indicated, the affected glands and associated inguinal lymph nodes are removed and a second surgery on the other side is performed 10-14 days later. This time interval allows the skin to stretch to allow for complete closure during the second surgery.

ADJUVANT THERAPIES

At least 90% of feline mammary tumors are malignant (compared to only 50% of canine mammary tumors). The most common histologic type is adenocarcinoma. Because of the high degree

of malignancy of feline mammary tumors, follow up chemotherapy is recommended to help delay the onset of metastasis. Doxorubicin, either alone or in combination with cyclophosphamide is currently recommended. Short-term partial and complete remissions have been induced in 50% of cats with metastatic or non-resectable local disease using doxorubicin based protocols.

PROGNOSTIC FACTORS

Mammary carcinomas in cats are highly invasive with 88 % of tumors invading into surrounding soft tissues and 53% exhibiting vascular invasion. Regional lymph nodes were positive for metastasis in 27% of specimens in one study. Factors associated with a worse prognosis include large tumor size (>3 cm), high number of mitotic figures, large amount of tumor necrosis, regional lymph node metastasis, and incomplete surgical resection as assessed by a pathologist.

Cats that had undergone radical surgery had a significantly longer disease free interval than cats treated with more conservative surgery. Metastasis or local recurrence is the most common cause of death in cats with mammary tumors. Metastasis to lungs or pleura is most common.