



Canine Mammary Carcinoma

Mammary tumors are the most common tumors in female intact dogs. The risk in male dogs is 1% or less than that in female dogs. Middle aged to older intact females are most likely to be diagnosed with mammary tumors. Spay (ovariectomy) at an early age significantly reduces the risk of mammary tumor development. The risk of mammary tumor development for dogs spayed before their first estrus is only 0.05%. In dogs spayed after the first estrus, the risk is 8% and 26% if spayed after the second estrus. Spaying a dog in later life does not prevent malignant mammary tumors from developing; however, some studies indicate that spay around the time of diagnosis had a survival advantage over those dogs that remained intact.

Mammary tumors are often first noted during physical examination, or they are noted by the groomer or by the owner. They start small and grow. Because estrogen exposure over a lifetime promotes tumor growth, it is not uncommon to find more than one tumor. The key to successful treatment is to catch and treat these tumors early.

Overall, about half of mammary tumors in dogs are malignant. Most are adenocarcinomas. Other types are possible and often bear a worse prognosis and outcome. There is also a specific subtype, called inflammatory carcinoma, that is highly aggressive and rapidly progressive. It can be mistaken for mastitis (mammary gland inflammation) as the skin is red, swollen, painful, and inflamed. These are highly metastatic and warrant a grave prognosis.

Diagnosis should include a biopsy of the mass. If it is small, complete removal should be attempted at the time of biopsy. Blood work (CBC, chemistry screen), urinalysis, 3-view chest radiographs (x-rays), and lymph node evaluation (if possible) should be performed. Abdominal ultrasound should be performed on a case-by-case basis. If possible at surgery, the lymph node should be removed and biopsied, though it is not always possible.

Overall, outcome is based on multiple factors: size, tumor type, tumor grade, presence of metastatic disease. Surgery for tumors that are low-to-intermediate grade carcinomas, have not spread, and are less than 3 cm is often curative. For larger tumors (> 5cm), treatment with surgery alone yields a median survival time around 8 to 10 months. Since surgery is the mainstay of treatment, and early detection and treatment are key.

Some cases are more advanced or may have features that indicate a more aggressive tumor behavior. These features include lymph node involvement and larger tumor size. In these cases, chemotherapy is recommended in addition to surgery. The hope of chemotherapy treatment in these situations is to reduce the risk of recurrence and spread to the lymph nodes, lungs, or other glands.

It's important to note that often new tumors arise in other glands. This is hard to avoid because lifetime exposure to estrogen has affected all glands. Therefore, we recommend careful post-treatment monitoring in all patients.