



Mast Cell Tumors

Quick Facts:

- o 20-25% of all skin/subcutaneous tumors in dogs are mast cell tumors (MCT)
- o 10-15% of canine MCT are clinically indistinguishable from subcutaneous lipomas
- o Definitive diagnosis of MCT cannot be made without cytologic or histologic evaluation of the lesion
- o Behavior of individual MCTs is difficult to predict but should always be considered aggressive until proven otherwise
- o 20% of dogs with MCT will have multiple primary tumors in their lifetime
- o Aggressive surgical resection remains the cornerstone of treatment

Notes from Dr. Post:

Background:

Mast cell tumors are one of the most common skin tumors of the dog. There are three grades of mast cell tumor: grade I, II and III. Grading involves a pathologist looking at a tumor underneath a microscope and analyzing how abnormal the cells look and how invasive they are into the surrounding tissue--usually, the higher the grade, the more aggressive the tumor.

We also stage animals that have mast cell tumors. Staging involves determining where the tumor is in the dog and where it is not. The tests we perform to determine the stage are: chest x-rays, abdominal ultrasound, lymph node aspirate and cytology, and a bone marrow evaluation.

Clinical Appearance:

Mast cell tumors can look like anything; they are most commonly reddish, raised masses on the skin. However, they can look and feel like fatty tumors as well. These tumors commonly cause the pet to feel "itchy" in the general area of the mass. This occurs due to the presence of chemicals, including histamine, in the granules of the mast cell tumor. Histamine is the chemical most responsible for the redness, itchiness and swelling, characteristics typical of an allergic response in people.

Diagnosis:

The diagnosis of mast cell tumor requires either cytology or histology. Cytology of a mass that demonstrates cells with bluish granules confirms the diagnosis of mast cell tumor. The grading of the tumor, however, requires a biopsy.

Treatment:

Surgical removal is the treatment of choice for most mast cell tumors. Grade I tumors are usually small and superficial and can be effectively cured with surgical removal. Small grade II tumors are also usually cured with complete surgical removal. It is when grade II or III tumors cannot be completely removed or when they have already spread to other parts of the body, do we need to use additional or adjuvant therapy. Radiation therapy and chemotherapy are often used in aggressive grade II or grade III tumors. Radiation therapy is useful in large (>4cm) grade II tumors that have been surgically removed, as it is unlikely that all malignant cells have been removed, or with grade II mast cell tumors that cannot be completely resected. Radiation therapy is beneficial in grade III mast cell tumors as well. Chemotherapy is beneficial to dogs with both grade II and grade III mast cell tumors when there is spread of the disease to distant parts of the body or to prevent tumors that have a high chance of metastasizing (or spreading).