

Mast Cell Tumor in Dogs

Client Handout

Mast cell tumors are very common tumor in dogs, and in fact, are the most common malignant skin cancer seen in dogs. Owners normally find this tumor as a skin mass, which may be ulcerated or reddened. Commonly, owners report a history of the mass fluctuating in size over several months prior to presentation.

Clinical signs range from none at all to chewing at the skin mass, regional or generalized redness, swelling, or systemic signs such as vomiting and anorexia.

Mast cell tumors are more common in the following breeds: Boxers, Boston terriers, Labrador retrievers, Beagles, terriers and Schnauzers. This tumor most commonly affects older dogs (9 years of age on average).

Typically diagnosis can be accomplished with an aspirate taken at the time of initial examination. The cells that are retrieved with aspiration are then evaluated under the microscope and can be identified by granules, which are found inside mast cells. This allows a determination of the tumor type but does not allow the tumor to be graded. To determine tumor grade the tumor must be removed and sent in to a veterinary pathologist.

Mast cell tumors are divided into grades based on microscopic features. There are three grades of tumors: I- III. Grade I tumors are the least aggressive and least likely to metastasize or to be locally aggressive. Grade II tumors are intermediate in their behavior. Grade III tumors are the most aggressive and may both recur locally and tend to spread to other areas of the body or metastasize. While these grades serve as a guide for expected behavior, mast cell tumors are notoriously very unpredictable, so any grade of tumor can on occasion behave in an unexpected manner.

Grade I mast cell tumors are usually treated with surgery alone. Typically mast cell tumors are removed with wide surgical margins at the time of initial surgery, if possible. This should eliminate the need for further treatment in this group, however owners should be careful to monitor for new growths or recurrence at the surgery site.

Grade II mast cell tumors comprise approximately 85 percent of all graded mast cell tumors. These tumors, as previously mentioned, are intermediate in their behavior, but surgical removal alone with wide surgical margins (3 cm margins) is curative in approximately 85 percent of cases. If incisional margins are determined not to be free of tumor at time of surgery, then decisions with regard to re-operation, radiation, or chemotherapy must be made. If possible, surgical revision would be the first choice, however this is not always possible, particularly when tumors occur on the legs or face. In cases where surgical intervention cannot be attempted, radiation therapy would be the next treatment of choice for local control of disease. Chemotherapy may be considered as an additional treatment or if other options are not possible for whatever reason.

Grade III mast cell tumors are the most aggressive category and require further treatment, as this group tends to metastasize as well as recur locally. Without treatment, dogs with grade III mast cell disease typically die of their disease within 6 months. Depending on the individual case, recommendations regarding further surgery or radiation therapy may be made, however, this group of animals should undergo chemotherapy to attempt to keep the disease under control. Response rates to chemotherapy are approximately 30-40 percent for grade III mast cell disease. With chemotherapy, average expected treatment response times are reported to be from 3-6 months. However, long term survival is seen occasionally in grade III tumors managed aggressively (>1year).