

ONCOLOGY: **Canine Mast Cell Tumor**

Background

There is no known cause of mast cell tumors. The most common location for mast cell tumors is the skin, however, they can metastasize to lymph nodes, blood, spleen, liver and bone marrow. Mast cell tumors are the most common skin tumors in dogs, accounting for about 16% - 21% of skin tumors. Mast cell tumors are primarily a disease of older dogs with a mean age of 9 years. There is no sex predilection and mixed breeds, Boxers, Boston Terriers, Labrador Retrievers, Beagles and Schnauzers have been reported to be pre-disposed.

Clinical Signs

The clinical presentation of skin mast cell tumors in dogs is variable. The majority of dogs present with a solitary skin mass, although about 11-14% will have multiple tumors. Some dogs present with stomach ulcers, in shock or hemorrhaging secondary to the release of heparin and histamine from the tumor cells.

Diagnosis & Staging

Most mast cell tumors can be easily diagnosed with a fine needle aspiration. Occasionally in order to get a definitive diagnosis, a biopsy is required. A biopsy is required for grade and margins. Besides histopathology after removal, common staging tests for mast cell tumors can include a complete blood count and chemistry profile, a buffy coat smear, fine needle aspiration of enlarged lymph nodes, an abdominal ultrasound and fine needle aspiration of any suspicious lesions, and a bone marrow aspirate.

Treatment

Treatment options for mast cell tumors include surgery, radiation therapy and chemotherapy and are largely dictated by the grade of the tumor, the location of the tumor, the surgical margins after removal, whether there is the presence of spread and any other concurrent conditions. In general, surgery and radiation therapy are recommended for local control and chemotherapy for systemic control. Antihistamines, antacids and corticosteroids are often used to treat and prevent stomach ulcers and shock.

Prognosis

The prognosis of completely excised grade I and grade II mast cell tumors is excellent where about 50-75% of patients are essentially cured. Radiation therapy has been proven to be somewhat effective in the setting of measurable disease and extremely effective post-operatively for incompletely excised tumors. Most studies have shown a one-year control rate of about 50% in the setting of measurable disease and treatment with radiation therapy. When the tumor can be removed and follow-up radiation is used for an incomplete excision, the prognosis goes up to about an 85–95% two-year control rate.

Corticosteroids and other chemotherapeutics have also shown some efficacy against mast cell tumors in the setting of measurable disease or post-operatively for high risk tumors. Prednisone has shown about a 20% response rate for an average of a few weeks in the setting of measurable disease. The chemotherapy drug lomustine (CCNU) has shown about a 40% response rate for an average of 79 days. The combination of prednisone and another chemotherapy drug called vinblastine has shown about a 40% response rate for an average of 154 days. Chemotherapy is usually more effective post-operatively when we are treating the possible presence of microscopic cells. The average survival time of dogs with incompletely excised, high risk (grade III tumors or tumors at a mucous membrane) mast cell tumors, treated with prednisone and vinblastine after surgery has been shown to be 1374 days.

****A version with references available upon request**

Questions?

Our oncologists are available for questions and consultations on medical conditions. They are also on-call for consultation on cases seen through the emergency service 24/7.

Oncology Clinicians:

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MVS offers oncology service at all three hospital locations; we hope our oncology staff serves as an extension of your practice. Our clinicians have years of specialized training and experience. Please let us know how we can help you and your clients.

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