

Mast Cell Tumors in Dogs

A Brief Guide • Part of the Educational Pet Disease Series from Lap of Love

Signs & Symptoms

Initial Symptoms

- Inability to exercise and/or play
- Difficulty getting comfortable
- Mild to severe weight loss
- Stomach ulcers
- Inappetence and nausea
- Vomiting and diarrhea

Intermediate Symptoms

- Coughing
- Reclusive behavior
- Trouble breathing
- Panting
- Unthrifty coat
- Abdominal pain

Advanced Symptoms

- Abnormal bleeding
- Pacing and whining
- Slow wound healing
- Sudden collapse
- Seizures
- Ulcerated red masses

Crisis Situations Requiring Immediate Medical Intervention

- Difficulty breathing/panting
- Unable to walk
- Blue gums and/or tongue
- Sudden collapse
- Uncontrollable vomiting/diarrhea
- Crying in pain

What Is It?

Mast cell tumors (MCT) represent a commonly diagnosed cancer formed from specialized cells (Mast Cells) within the body that respond to inflammation and allergens. Within the canine population, MCTs most commonly arise on the skin; However, the tumor can affect organs such as the spleen, liver, chest, stomach, gastrointestinal tract, and bone marrow. Breeds such as Pugs, Boxers, Retrievers, and Bulldogs represent some of the predisposed breeds, though all breeds are susceptible. Once formed, the MCT populates malignant (cancerous) mast cells that contain granules of chemicals called histamines that release into the body causing serious systemic illnesses. The release of granules can occur spontaneously or by agitation of the tumor leading to problems that include swelling and redness around the tumor, an inflammatory response causing shock, issues with blood pressure, and stomach ulcers. Due to the unpredictable nature of MCTs, the appearance and characteristics are not consistent. Once formed, their behavior is also unpredictable; some grow slowly for months then quickly become large, others appear suddenly. As a malignant cancer, MCTs can spread to other areas (metastasize), most commonly the lymph nodes, liver, and spleen.

Diagnosis

The first step in diagnosing a MCT of the skin (the most common form) is typically with a fine needle aspirate and cytology. A small needle is placed in the mass and a few cells are aspirated (removed) from the tumor, put on a slide, then reviewed by your veterinarian and/or sent out to pathology for review. It is a quick procedure that can typically take place during an office visit. In some cases, a biopsy or removal of the mass may be needed for an accurate diagnosis. A specific grading system is determined by the biopsy results. Grading starts at grade I (low grade), then grade II, or grade III (high grade) tumors. Further diagnostics including abdominal ultrasound, bone marrow aspirate, chest x-rays, lymph node biopsy and blood work to determine the full extent of the disease.

Treatment and Management

For many dogs, surgical removal of the mass (if possible) is usually the first step and can sometimes result in a cure if the cancer has not spread and the tumor removal was complete. If the MCT is a low-grade tumor (grade I and some grade II) surgery with complete removal is often fully curative. If complete removal was not obtained, then radiation therapy after surgery can be effective in treating the remaining MCT. If the tumor is medium to high grade, or has already spread, then a combination of chemotherapy and radiation therapy is often the best option. Newer targeted chemotherapy agents have shown great promise in effectively treating MCT in dogs with the ease of being an oral medication given at home. Prednisone, Pepcid, and Benadryl are also used to control some of the signs that occur secondary to the chemical release from the mast cells. Anti-nausea medications and pain medications can also be used as needed.

Prognosis

With surgical removal and residual radiation therapy, cure rates as high as 80% have been achieved. Chemotherapy is recommended in all cases with metastasis, for patients with high-grade II or III MCT, and when surgery was not curative and radiation is not an option. The average survival time depends on the grade of the tumor, with lower grades having longer survival times. Grade I tumors can often

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be fully cured, while survival time for grade II-III MCT with treatment is 2-3 years or longer. Dogs already showing systemic signs, and those with tumors that reappear or grow quickly generally have a guarded prognosis. Consultation with your veterinarian and a referral to consult with a board certified veterinary oncologist is the best way to learn of your options and develop a plan tailored for your dog, whether that involves aggressive treatment or simply palliative care.

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Management Tips

Consider providing:

- Easily accessible food and water
- Ramps/stairs to common areas
- Access to "safe" quiet areas
- Creative stimulation that does not require strenuous activity
- Compounded medications in easy to deliver and/or tasty form
- Wet food to increase water intake
- Mild activity, no rough play
- Warm, soft sleeping areas

Try to:

- Be consistent with medications
- Track appetite, bowel movements, breathing, weight, urination, etc.
- Limit stress (kids, noise)
- Manage weight with diets
- Keep up with preventative care
- Feel all over for new lumps weekly and measure and mark the sizes
- Check any new mass ASAP
- Modifying slippery surfaces to increase traction

Before your pet's condition becomes unmanageable or they are losing quality of life, it is important to begin end-of-life care discussions. Learn about pet hospice care and/or euthanasia services in your area so you are prepared.