

Mast Cell Tumors

By Dr. Karen Becker

Hi, I'm Dr. Karen Becker. Mast cells exist in all the tissues of your pet's body, but they are found in the highest concentrations in the skin, respiratory tract and gastrointestinal tract. Mast cells are very rich in histamine, which is a vasodilator that promotes blood flow to tissues, and also heparin, an anti-coagulant that prevents blood from clotting too quickly. Both of these naturally occurring chemicals play a role in all allergic responses, non-allergenic skin disease, wound healing and tissue remodeling. They can also increase stomach acid production.

Mast Cell Tumor Symptoms

When mast cells replicate in higher than normal numbers, a mast cell tumor can form. Mast cell tumors are actually incredibly common, accounting for about 20 percent of all skin tumors in dogs. If a pet has a mast cell tumor on the skin, there'll be a bump or a lesion of some kind. Sometimes it's a red raised pink bump that looks like a pencil eraser on the surface of the skin. It can be ulcerated or be scabby and a little oozy, or not.

Sometimes the tumor will actually be less defined. It could just feel like a bump under the skin, like a fatty lipoma. Because these tumors have the ability to mimic the appearance of many, many types of skin problems and skin lumps and bumps, it's very important to have your veterinarian check out any new lump or bump on your pet. Dogs usually develop a single tumor, whereas cats can develop multiple tumors. Although some may be benign, most mast cell tumors are cancerous or malignant.

Mast cell tumors can be irritating. Pets can sometimes begin licking, scratching or picking at the site of the irritation. There also can be some side effects or complications from mast cell tumors, such as stomach problems from the overproduction of histamine and excessive bleeding from the release of heparin.

Risk Factors and Diagnosis for Mast Cell Tumors

Definitive diagnosis of a mast cell tumor is made through physical examination and testing, including a tumor aspiration or biopsy. If the fine-needle aspiration reveals mast cells, it's very important that the veterinary surgeon take a very large margin around the tumor, which will reduce the likelihood of leaving tumor cells behind, which is very common with mast cell resections or having those mast cell tumors removed. The tissue that is removed will be sent to a pathologist for staging or grading. This will let your veterinarian know how extensive the disease is and what type of treatment is needed.

In kitties, mast cell tumors are often seen around the face, so the skin of the head and neck. But they also can occur anywhere in the body. For kitties, these tumors are usually more present in middle-aged to older cats, but any aged cat can develop a mast cell tumor, including kittens. The Siamese tends to be at a higher risk of developing mast cell tumors than any other breed. They develop a specific type of tumor called a "histiocytic mast cell tumor."

In the majority of feline subcutaneous or skin mast cell tumors, the treatment is removal of the entire tumor with surgery. Usually, intervention provides a complete cure. Unfortunately, kitties with mast cell tumors on the inside of their bodies, which is typically the gastrointestinal (GI) tract or spleen, carry a much poorer prognosis than tumors occurring on the skin.

In dogs, mast cell tumors are most often found on the trunk, the limbs and between the toes. The tumors are seen more often in certain breeds, including the bulldog, the Boston terrier, boxer, pug, Labrador, golden retriever, Cocker Spaniel, schnauzer, Staffordshire terrier, beagle, Rhodesian ridgeback, Weimaraner and Shar Pei.

Stages and Prognoses for Mast Cell Tumors

Prognosis for dogs depends on the tumor location, the extent of the tumor, the grade of the tumor and the type of treatment given. Mast cell tumors of the skin are very different in dogs than in cats. Surgery to remove the tumor is less invasive in cats. The prognosis for a full recovery is much better in cats than in dogs.

Mast cell tumors with generally poor prognoses are those on the muscle, in the mouth, in the internal organs or mast cells in the bloodstream or bone marrow. Ulcerated tumors carry a poorer prognosis than tumors that are not open and bleeding. Mast cell tumors that cause GI ulceration or are large, fast-growing or recurring also carry a much poorer prognosis.

Mast cell tumors are typically graded on a scale of 1 to 3 in dogs, with Grade 3 being the most serious and carrying the worst prognosis for recovery. Grade 1 mast cell tumors generally have an excellent cure rate, as long as the entire thing is removed. Again, it's important that your surgeon take very wide margins.

If a dog goes 30 weeks post-surgery for a Grade 1 tumor with no recurrence of the tumor during that time, he's considered cured. Even with aggressive surgery, the recurrence rate for a Grade 2 mast cell tumor is about 20 percent. The majority of dogs with Grade 3 malignant mast cell tumors will experience the spread of tumor. Only about 10 percent of these dogs live longer than a year after surgery.

In addition to histopathology, which means looking at the cancer's tissue microscopically, veterinarians also have the option to perform cell proliferation analysis through Michigan State University's diagnostic lab, which is something I highly recommend that they do.

This really great technology analyzes three markers to assess the risk of systemic disease, which means that your dog or cat may have a lesion externally, but if you do this additional test, it'll tell you what's happening within the internal terrain of your dog or cat's body, which is really important for peace of mind or for prognosis planning.

Veterinarians using this technology to help formulate a treatment plan will have a much more accurate blueprint of what's really going on with mast cells deep within the patient's body. If your pet has been diagnosed with a mast cell tumor, I recommend that you do this additional test.

Recommendations for Mast Cell Tumors

I also recommend that you work with an integrative or holistic veterinarian to reduce the risk of recurrence. That's because these integrative veterinarians use a variety of other additional adjunct therapies that can be really beneficial, such as Ayurvedic medicine and Chinese herbs that naturally decrease the number of circulating mast cells in the body. There are also some other nutraceuticals or additional supplements that can naturally help reduce mast cell degranulation and histamine release, which can keep the patients much more comfortable.

I also recommend that you eliminate any foods with carbohydrates for patients that have mast cell tumors, because carbohydrates create inflammation in the body. My best dietary suggestion is to institute a ketogenic diet for four months, as the anti-inflammatory effects of the ketogenic diet are really profound. It's what animals really need when their bodies are really gearing up to try and fight off this cancer or to heal from a surgical procedure.

I also recommend supplementation with a rich source of omega-3 fatty acid, such as krill oil. I absolutely recommend that if your pet has been diagnosed with mast cell tumors that you never vaccinate them again. Additional vaccines can prompt a massive inflammatory response that can spur on additional mast cell tumors. From this point going forward, if you have a dog or cat diagnosed with mast cell, we recommend that you titer.

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