

# All about canine mast cell tumors

Mast cell tumors are the most common form of malignant skin cancer in dogs. Some breeds are predisposed to developing these tumors, including boxers, Boston terriers, bulldogs, pugs, schnauzers, Labrador retrievers, and beagles. Usually, these tumors develop in older dogs (8 to 9 years old, on average), but young dogs can get them, too.

## What it looks like

Just one tumor or many tumors may be present, and they can be small or large. A mast cell tumor often looks like a bug bite—a red hairless nodule that changes in size over time, becoming larger or smaller (*see photo at top*). But unlike a bug bite, it never completely goes away.

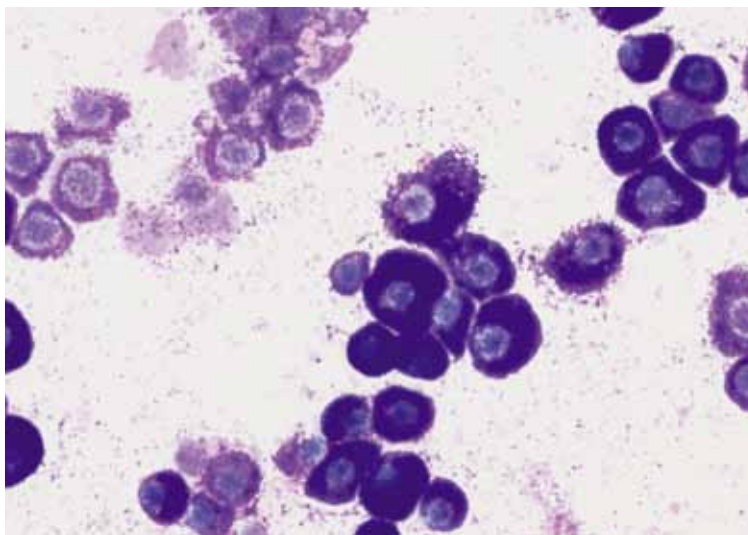
It is very important to realize that mast cell tumors can look like any other benign or malignant lump on or under the skin. So if you find a new lump on your dog, bring it to the attention of your veterinarian as soon as you notice it.

## How it's diagnosed

Mast cell tumors are relatively easy to diagnose with a test called *fine-needle aspiration*. Your veterinarian will insert a small needle into the tumor, extract some sample cells, deposit the cells on a glass slide, and then look at the cells under the microscope (*see bottom photo*). The test is quick, noninvasive, and inexpensive.



A mast cell tumor near the base of a dog's ear.



An example of what a mast cell tumor looks like under the microscope (500X; aqueous Wright's stain). (Photo courtesy of Bente Flatland, DVM, DACVIM, DACVP, assistant professor of clinical pathology, College of Veterinary Medicine, The University of Tennessee.)

## Information from your veterinarian

### Tumor staging

If a mast cell tumor has been diagnosed in your dog, the next step is to make sure the tumor has not spread to other locations in the body, or *metastasized*. It is especially important to take this step if the tumor is big since bigger tumors tend to behave in a more aggressive manner. This process, called *tumor staging*, includes performing bloodwork to check your dog's overall well-being, obtaining radiographs (x-rays) of the chest, and performing an ultrasonographic examination of the abdomen. Special attention is paid to the lymph nodes, spleen, and liver since these are the organs mast cell tumors frequently metastasize to. If the tumor is small and easily removable, your veterinarian may recommend surgery first.

### Surgical treatment

The good news is, most mast cell tumors can be successfully managed with surgical treatment. After surgery, your veterinarian will submit the tumor and surrounding tissue for evaluation by a board-certified pathologist. The report from the pathologist will determine whether additional treatment is needed.

For example, if the report states that the tumor has not been removed with clean margins, this means that some tumor cells have been left behind at the surgical site and radiation therapy may be recommended to destroy them. If the report states that the tumor is aggressive (high grade), chemotherapy will be recommended because this subcategory of tumors is more likely to metastasize.

### When surgery isn't an option

If the tumor is too big for surgical removal, radiation therapy and chemotherapy to shrink the tumor can be considered. If metastatic disease is found during staging, chemotherapy is recommended.

Chemotherapy drugs commonly used to treat mast cell tumors are vinblastine, prednisone, and lomustine. Chemotherapy is usually well-tolerated by most dogs. About 80% of dogs receiving chemotherapy do not experience any side effects. Your veterinarian will go over the potential side effects and how to monitor for them in detail before prescribing chemotherapy.

Two new drugs that belong to a class of tyrosine kinase inhibitors have recently been approved by the Food and Drug Administration for the treatment of canine mast cell tumors that cannot be surgically removed—toceranib phosphate (Palladia) and maitinib mesylate (Kinavet-CA1). These drugs can be given orally at home on a daily to every-other-day basis. Side effects of these drugs and the kind of monitoring your dog will need should be discussed with your veterinarian.

### Will my dog be OK?

Some mast cell tumors can behave very aggressively and cannot be cured, but tumor progression can be delayed with treatment. Without treatment, the life span of a dog with an aggressive mast cell tumor typically is appreciably shortened. However, most mast cell tumors are confined to one particular area and, if caught early, can be treated successfully with surgery. They will not affect your dog's normal life span.

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