Mast Cell Tumors

The most common type of skin tumors in dogs and second most common in cats are mast cell tumors. These tumors are a result of mast cells that grow out of control. If left untreated, these cancer cells can spread throughout the body. For this reason, have any mass you notice on your pet examined.

Mast Cells

Mast cells are a type of white blood cell and are responsible for proper immune response. They help identify and fight infections. Mast cells also contain two types of histamine that are released during allergic reactions. Since infections typically come in at the skin, airways, and intestines, this is where most mast cells normally live within the body.

The body has a complex system to keep these cells in check doing their jobs normally. When the body is no longer able to keep control, these cells grow out of control and form a tumor.

Cause

There is no known reason why mast cell tumors occur. A pet with chronic inflammation of the skin may be predisposed to the tumors.

Breed Predilection

Although mast cell tumors can affect any pet, there are certain breeds that are more likely to develop them. These include Pugs, Boxers, Labrador Retrievers, Boston Terriers, Golden Retrievers, Shar Pei, Pit Bulls, and Jack Russell Terriers. Siamese cats are more prone to having these tumors.

Signs

A mast cell tumor in the skin may be fast growing and seem to appear suddenly while others may be slow growing being present and unchanged for months to years.

The tumor can be on top of the skin or just under. It may or may not be haired, reddened, oozing, itchy, or painful.

Commonly, the tumor will grow and shrink repeatedly because of the histamine release. (Think of a mosquito bite that gets huge and red. This is due to a histamine release by the body.)

If the disease has metastasized or spread to the internal organs, signs may include weight loss, vomiting, and anorexia. Stomach ulcers can develop because the histamine from the mast cells can increase stomach acid. There may be vomiting (with or without blood) or blood in the stool if there is a stomach ulcer present. Blood will appear as dark, tarry stool.

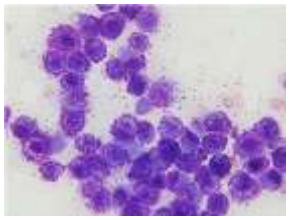
Metastasis

Mast cell tumors commonly metastasize or spread to local lymph nodes and then to the spleen, liver, intestinal lymph nodes, other skin sites, and bone marrow. The outlook is poor for pets that have the tumors spread.

Diagnosis

We need to do a complete examination to evaluate the mass, look for additional masses, and evaluate lymph nodes for signs of spreading.

If the mass is in the skin, a fine needle aspirate (FNA) will be done on the tumor and lymph nodes near it. This involves inserting a small needle into the mass to obtain cells to evaluate under the microscope.



Most mast cells tumors are easily diagnosed this way because they have a very characteristic appearance.

NOTE: A fine needle aspirate will cause a mast cell tumor to swell and look angry. It will also likely bleed. If you notice this after you are home, you can apply a cold pack to the area for 20 minutes to decrease swelling or give Benadryl (an antihistamine).

Other tests look for signs and effects of mast cell tumors. Blood tests will give an indication if other organs are involved. Abdominal ultrasound helps to evaluate the spleen and liver along with the lymph nodes. A chest x-ray is helpful if the cancer has spread to look at lymph nodes in the chest.

These tests help to determine how aggressive the tumor is. They are also beneficial before doing surgery to know if there is an increased risk with anesthesia.

Treatment

Surgery is the primary treatment for mast cell tumors. Since tumor cells can extend beyond the mass, the surgeon will remove a wide area around the tumor.

The removed tumor will be examined at a lab to evaluate cells and determine a grade. The grade, along with other factors, determines the likelihood of successful treatment. Grade I is the least aggressive and least likely to spread to other organs. Grade III is highly aggressive with a high rate of metastasis (spreading).

Additional treatment depends on size, location, grade, and the potential for whole body disease.

If the surgery results in incomplete removal of the tumor or if the tumor cannot be removed surgically, radiation may be used to help prevent regrowth. Radiation can also help to shrink a tumor in order to make a dog more comfortable if the mass is large and non-surgical.

Chemotherapy can treat the whole body if the cancer has spread or there is part of the tumor remaining. Most dogs tolerate chemotherapy well and do not suffer the common side effects seen in humans.

Because mast cells release histamines, dogs will receive antihistamines as well as antacids to avoid side effects from the histamine. These may be needed for life or until the cancer is in remission.

Follow Up

After treatment, the dog will need to be examined for signs of recurrence or new tumors on a regular basis. The tumor will return 70% of the time when the tumor is not removed completely. Have any new mass evaluated immediately and removed if needed.

Prognosis

Prognosis for mast cell tumors varies greatly and mast cell tumors can be unpredictable. Most dogs will be cured when surgery removes the tumor completely, it's a grade I or II, and it hasn't spread. However, when the tumor is more aggressive, the prognosis is fair to poor.