

This handout is emailed to the client when the diagnosis of lymphoma is confirmed. The client is asked to read this material prior to the recheck for suture removal at approximately 10 days post-op. It is at this recheck that treatment begins. If the client has read this handout, communication is greatly facilitated.

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Lymphoma

Lymphoma is defined as cancer of lymphoid tissue. Lymphoid tissue is located in many tissues of the body including the lymph nodes, tonsils, liver, kidneys, and many other organs. The intestinal tract has the largest amount of lymphoid tissue in the body; therefore, it is often the site of lymphoma in cats.

There are two main types of lymphoma. The slower growing type is called small cell lymphoma. The more rapidly growing type is called large cell lymphoma or lymphoblastic lymphoma. Both types can occur in any lymphoid tissue in the body.

Diagnosis

The cause of lymphoma is not fully understood. The feline leukemia virus can cause it, but that virus has largely been controlled with vaccination against the feline leukemia virus. The spontaneous form is by far the most common form. There is mounting evidence that many cats initially have inflammatory bowel disease, then, after many months to years, it transforms into lymphoma. However, lymphoma in other organs usually cannot be related to previous disease in that organ.

The first step in diagnosis is an ultrasound study of the stomach or intestinal walls. If the walls of either organ are thickened, further tests are needed. Ultimately a pathologist is responsible for the diagnosis; the pathologist finds malignant lymphocytes in various organs, especially the small intestine.

In order to obtain these cells, a biopsy is required. The majority of disease occurs in the small intestine, not in the stomach. Therefore, biopsies of the stomach are usually not sufficient to make the diagnosis. Many cats with inflammatory bowel disease of the small intestine have the same clinical signs and similar ultrasound findings. The only way to distinguish between the two diseases is with a biopsy. Lymphoma usually affects only certain portions of the intestine; thus, it is called a segmental disease. Some segments contain lymphoma; some segments are normal. Therefore, multiple biopsies are needed to rule in or rule out lymphoma.

In the past we have used an endoscope to try to diagnose IBD. However, it is not possible to reach most parts of the small intestine of the cat with an endoscope. In addition, the biopsies taken with an endoscope do not sample all of the layers of the organ; they are not "full thickness biopsies." The pathologist needs all of the layers of the affected organ to fully understand the disease. Therefore, surgery is needed to biopsy the small intestine.

Treatment

Treatment for lymphoma may involve surgery if a mass occurs that threatens the function of an organ, most notably the intestinal tract. Some cats have lymphomatous masses that ultimately cause an intestinal obstruction. Masses like this must be removed surgically. However, most cats

with lymphoma of the intestine only have thickening of the intestinal wall. This form of lymphoma cannot be surgically removed. Furthermore, even when a lymphomatous mass occurs, the disease is not limited to that location. When lymphoma is present, it is a disease that must be considered widespread in the body. Therefore, chemotherapy is needed since chemotherapy drugs will attack the disease in virtually every location.

There are several chemotherapy drugs and protocols for treating lymphoma. Most of these have significant side effects that make their use undesirable in most cats. We are using lomustine, a chemotherapy drug that is associated with minimal side effects and produces very good results in a high percentage of cats. The most notable side effect is a reduction in the neutrophil count. Neutrophils are normal blood cells and part of the immune system. If the neutrophil count becomes below normal, treatment is suspended until it rises, which almost always happens within 2-4 weeks. When it becomes normal again, treatment resumes.

Lomustine is given orally every four weeks. It is a drug that must be administered by a veterinarian so we must do it. Its administration is preceded by a blood count to monitor neutrophil count. The typical protocol is to administer six doses of lomustine. However, the protocol for each cat is individualized.

Lomustine is accompanied by a corticosteroid (“steroid”). Prednisone or prednisolone is the most commonly used steroid. It is given once daily and orally. If your cat is very difficult to medicate orally, an injection of the long-acting steroid Depo-Medrol may be given.

Probiotics are nutritional supplements that supply the bacteria needed for digestion (“good bacteria”). Veterinary probiotics are formulated specifically with the bacteria needed to help cats (and dogs). Provable is a capsule containing a chicken-flavored powder. The capsule can be given directly down the throat or opened and sprinkled into canned food. FortiFlora is a powder that is sprinkled into food. Either product is acceptable and is given for 30-60 days.

Vitamin B12 is not synthesized (made) in the cat. It is found in adequate amounts in commercial cat foods. When the food is digested vitamin B12 is absorbed through the walls of the small intestine. Small intestinal disease prevents proper absorption. Therefore, an injectable form of B12 is given subcutaneously (under the skin) for several weeks beginning with twice per week injections then going to once per week injections. One of the side benefits of B12 administration is that this drug often stimulates the appetite of cats that are not eating well. If you are not comfortable with subcutaneous injection technique, we will be glad to demonstrate it or you can go to our Facebook page to the video on giving subcutaneous injections.

Prognosis

As with any cancer treatment, different individuals respond in different ways. With lymphoma, there is also usually a difference in response for small cell lymphoma vs. lymphoblastic lymphoma with the former responding better. We expect about 75% of cats with small cell lymphoma to achieve remission and for remission to last 1-3 years. We do not promise a cure because lymphoma is not considered a totally curable disease. However, cats in remission appear to be cured since their clinical signs (vomiting, diarrhea, weight loss) are generally gone and quality life returns.