

Lymphoma, Peripheral or Multicentric

ABOUT THE DIAGNOSIS

Lymphoma (also called lymphosarcoma, Hodgkin's disease, and non-Hodgkin's lymphoma) is a type of cancer caused by malignant white blood cells called lymphocytes. These cells of the immune system are designed to be mobile and active throughout the body. However, it is possible for these cells to become cancerous and to congregate in malignant tumors most commonly in the lymph nodes (lymph glands), spleen, liver, or bone marrow, but potentially in any organ of the body. This accumulation of cancerous lymphocytes in tissue is the definition of lymphoma.

Therefore, one of the most common symptoms of lymphoma is swelling of the lymph nodes (located under the neck, at the top of the shoulders, at the junction between the belly and the groin, and on the hind legs behind the knees). Also commonly noted as the first signs of lymphoma are vague symptoms of not feeling well, including decreased energy, decreased appetite, weight loss, or increased thirst and urination. These symptoms—and even enlargement of the lymph nodes—are very nonspecific, however. That is, they can be caused by lymphoma or by many other, very different diseases that produce exactly the same external signs. Therefore, the most important step with any animal that shows symptoms that could mean lymphoma is to perform the appropriate medical tests to confirm or refute lymphoma.

When a veterinarian suspects lymphoma, one of the easiest and most successful tests that can be performed is a *fine-needle aspirate* of the swollen tissue. Using a very thin needle, the veterinarian painlessly withdraws a few cells from within the lymph node or other affected tissue and submits this specimen for microscopic analysis. This approach is reliable, and if there is any doubt as to the result when the laboratory report returns, your veterinarian may then recommend a confirmatory test such as a biopsy, which is a larger sample of tissue taken surgically under general anesthesia. Under any circumstances, patients that could have lymphoma require medical tests that are often performed on the same visit as the fine-needle aspirate. These tests are a routine series of blood and urine screens (complete blood count, serum biochemistry profile, urinalysis), x-rays of the chest (also called thoracic radiographs), and an ultrasound examination of the belly (abdomen); cats also must be tested for the feline leukemia virus and feline immunodeficiency virus. All these tests have two functions: they identify other diseases that could mimic lymphoma, which helps prevent a misdiagnosis of lymphoma being made, and they also gauge the functioning of the organ systems of the body to assess the impact and extent of lymphoma.

LIVING WITH THE DIAGNOSIS

If lymphoma is confirmed, some very important points need to be considered and decisions made. Lymphoma is a malignant cancer and is not curable. Some pet owners and families choose to have their pet humanely euthanized when lymphoma is first confirmed, which is understandable and acceptable. However, lymphoma is also one of the most easily and successfully treated cancers in animals, and many patients with lymphoma outlive animals with other noncancerous diseases such as heart problems, liver disease, and so on. In other words, lymphoma is serious but far from hopeless, and the majority of dogs and cats with lymphoma improve significantly or completely, for months to a year or more, if they are treated with anticancer medications given at home, in the hospital, or both.

Once it is identified conclusively, lymphoma needs to be treated if treatment is acceptable and possible for you emotionally, financially, and logistically. Without treatment, dogs and cats with lymphoma have worsening of their original symptoms, and ultimately the disease begins to interfere with vital functions such as food intake and comfortable breathing. With few exceptions, most animals with lymphoma whose owners decline all treatment only live from days to several weeks after the diagnosis has been made. In such cases, the most important factor to monitor is the beginning of suffering, and your veterinarian can help you know beforehand what some signs or symptoms of deterioration could be.

TREATMENT

The goal of treatment is to improve and restore good quality of life. Successful treatment can also extend your pet's life by reducing the cancer burden, but keep in mind that it will not cure the cancer even if it can bring about remission.

The most effective way of treating pets with lymphoma is to give anticancer medications in the form of injections and oral tablets at home. This form of treatment is called chemotherapy, but unlike chemotherapy in human cancer patients, chemotherapy in animals is better tolerated. Hair falling out is very rare to nonexistent in most breeds of dogs and cats, and dogs and cats appear to be much more resistant to nausea and vomiting compared to humans. When side effects do occur, they are controlled by medications and prevented by altering the dose or type of chemotherapy.

The goal is to give anticancer medications in amounts and timing that destroy as many of the cancer cells as possible, while leaving healthy tissue cells unharmed. A good, safe, effective chemotherapy plan (protocol) is tailored to your pet's characteristics, including features of the lymphoma observed microscopically on specimens, other test results, and response to treatment.

Many times, veterinarians in general practice may not be fully equipped or skilled for handling treatment of patients with lymphoma, and a referral may be suggested. This has the great advantage of obtaining the knowledge and skill of a board-certified veterinary cancer specialist (oncologist). These specialist veterinarians, who have several years' additional training in the area of cancer medicine and animals with cancer, are specifically called Diplomates of the American or European College of Veterinary Internal Medicine, Specialty of Oncology (directories: www.acvim.org, www.vetspecialists.com and www.ecvim-ca.org), and you should be sure that these credentials are specifically mentioned by anyone claiming to be a veterinary cancer specialist.

The extent of the benefits of anticancer treatment depends on the intensity of the treatment. Chemotherapy is usually given by injection once per week to once every 3 weeks, in addition to medications given at home, for a period of 6 months. With this kind of approach, pets with lymphoma live an *average* of just above 1 year. There is significant variability, with some animals not responding to the medication well and living only days or weeks, whereas others do extremely well and live for well upward of 1 or 2 years and can approach a normal life span. The overall cost of chemotherapy also varies from one facility to the next but can often be expected to approach \$8000 or more for the full 6-month course of treatment when the best, safest, and therefore often the most costly medications are used.

Some pets with lymphoma do not receive chemotherapy (e.g., if, as the owner, you do not wish to treat a condition simply for quality of life since the disease is incurable or if cost is prohibitive).

Pets with lymphoma who do not receive chemotherapy may still be treated with oral medications such as cortisone and nothing more. Such medications can have some anticancer activity and may help substantially—not as much as chemotherapy in terms of life span extension, but much more so than no treatment at all. This type of medication is very inexpensive, but it can produce side effects such as increased eating, drinking, urinating, and defecating, which can be challenging to control if continence is affected. One drawback to this simpler approach is that cancer cells tend to become resistant to the medication, such that improvements occur for weeks to months, and if a different approach is chosen later on (e.g., change of heart and decision to pursue chemotherapy), a part of the benefits is already lost.

One of the most important aspects of treating lymphoma is the initial response. How quickly the initial symptoms disappear is an important indicator of treatment success. With lymphoma, patients should be significantly improved or back to normal within the first 7 to 14 days of chemotherapy treatment. Those first 2 weeks, which may involve some period of supportive care like rehydration with intravenous (IV) fluids in the hospital for the most serious cases, are an important indicator because failure to improve during this time means the long-term outlook is poor. Therefore, it is important to keep in mind that a “try it and see” approach to chemotherapy is generally safe, comfortable, and can help answer a crucial question: is there a fair chance that this will work long term (the lymphoma is significantly reduced in the first 2 weeks) or is the outlook more negative (no improvement in the first 2 weeks)? Chemotherapy is an outline and plan that is adjusted based on how things go.

DOs

- Understand the important steps in any dog or cat thought to have lymphoma:
 - Confirmatory testing—is it lymphoma or not?
 - Once lymphoma is confirmed, decision on treatment is needed. (Try it to see if it works or no treatment at all? If going ahead with treatment, will it be complete, including chemotherapy, in order to try for the greatest chance of beating the cancer back or will it be minimal, in order to provide some short-term benefit?) A “try-and-see” approach is acceptable as well.
 - If relapse occurs and the lymphoma comes out of remission, how long to continue with treatment?
 - These questions are essential, and you should not hesitate to discuss them with your veterinarian, both initially and throughout the period of treatment if you choose to pursue one. There is simply no single right answer to any of these questions, and what is right for one family and one patient will not be right for others.
- Realize that chemotherapy is different in humans versus pets and that dogs and cats rarely have any of the severe side effects that humans do.
- Your pet’s quality and quantity of life are dependent on you. You must give some of the medications, follow up as recommended by your veterinarian, and be watchful of side effects. Your participation in treatment can make all the difference.
- Decide in advance what standards would influence you to euthanize your pet. Stand by these standards, and try not to make emotional or fear-driven decisions in “the heat of the moment.” Deciding these standards in advance can help enormously if a situation arises that requires you to make tough decisions.
- Discuss the benefits of consultation with a veterinary oncology specialist. In addition to expertise in treatment of cancer, these

specialists might have access to the newest treatments available only as a part of clinical research trials. Sometimes these trials offer a financial incentive for participation, and might assume some of the costs of treatment or diagnostic testing.

DON'Ts

- Do not give up because of one bad day, but rather, be aware of overall trends. Have there been several bad days lately? Does this one bad day make you realize that your pet has not been himself/herself for quite some time? If so, then there is reason to question whether to continue, but if it is a single “off” day, things may be totally different a short while later.

WHEN TO CALL YOUR VETERINARIAN

- Recurrence of the original symptoms (re-enlargement of lymph nodes, vomiting, diarrhea, decreased appetite, weakness, pallor, excessive drinking, excessive urination, fever, or weight loss) should be discussed with your veterinarian.
- Your veterinarian should provide you with specific symptoms and side effects based on drugs prescribed. If not, you should feel comfortable calling and requesting this information.

SIGNS TO WATCH FOR

As signs compatible with the new onset of lymphoma, or the recurrence/relapse of lymphoma:

- Enlargement of lymph nodes. Your veterinarian or the staff can help you learn how to check these periodically.

As signs possibly linked to intolerance of medications, or of advancing/worsening lymphoma:

- Vomiting, diarrhea, decreased appetite, excessive drinking, excessive urination, weight loss. Some of these symptoms may be expected as a result of medications (e.g., prednisone, furosemide), so be sure to ask your veterinarian about whether to watch for these as expected medication-related effects or symptoms worthy of concern.

ROUTINE FOLLOW-UP

- Generally once per week for the first several visits, then more widely spread out depending on the particulars of your pet’s situation and response to treatment.
- Usually, with chemotherapy, every visit begins with a blood test. This is an important precaution that looks for the early signs of intolerance to chemotherapy. If the blood test results are fine, then the treatment can proceed, but if not, the veterinarian may recommend that chemotherapy be reduced in amount, delayed, or skipped altogether in order to let the body process all of the previous chemotherapy and be ready for the next treatment. In other words, the prechemotherapy blood test is important for every visit since it is a precautionary measure.



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