

Southern California Veterinary Specialty Hospital

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LYMPHOMA IN DOGS

Lymphoma, also known as lymphosarcoma, is a cancer of the lymphatic tissue. Lymphatic tissue is a filtration network of vessels and lymph nodes that returns fluids from the body to the blood stream. A genetic predisposition is suspected, but the exact cause of lymphoma is unknown. Some breeds tend to be at a higher risk for developing lymphoma.

Diagnosis

Lymphoma is most commonly found in the lymph nodes, liver and spleen of dogs, although any body system can be affected. The most common sign of lymphoma is a painless enlargement of the lymph nodes. Dogs may also have signs of illness from the effects of the cancer cells invading normal body tissues. To diagnose lymphoma, samples of the affected tissue must be examined under the microscope. Blood tests cannot diagnose lymphoma unless the cancer cells are actually present in the blood (a condition called leukemia).

Staging

Staging refers to examination of parts of the body considered to be at high risk for infiltration with lymphoma. Tests which may be used to stage a dog with lymphoma include physical examination, blood and urine analysis, lymph node aspirate, chest x-rays, abdominal ultrasound, bone marrow aspiration, microscopic evaluation of the liver and spleen and immunophenotyping of the cancer cells. Staging a patient will help determine if a patient is a good candidate for therapy and aid in determining an individual's prognosis.

Treatment – Chemotherapy

Lymphoma is not curable, but is controllable. Therapy can reduce the severity of clinical signs and add quality time to your dog's life. Chemotherapy is the most effective form of therapy for lymphoma.

When dogs with lymphoma are treated with chemotherapy, the results may be dramatic. For most patients, the lymphoma generally goes into remission (dormancy) within one or two weeks of treatment. A microscopic amount of the cancer remains, but the patient has no signs and enjoys a normal quality of life. Eventually the remaining cancer cells begin to divide and symptoms reappear, but most dogs return into remission with acceleration of their treatment. Unfortunately, the cancer cells eventually develop *resistance*, the ability to escape damage from the chemotherapy drugs. When lymphoma becomes resistant to chemotherapy, or when patients do not receive treatment for the disease, the cancer overwhelms the rest of the body and the patient will succumb to the disease.

Most chemotherapy medications must be given as intravenous (IV) injections. Other medications are available as tablets and can be given at home. Although many medications can control lymphoma for short periods of time, chemotherapy is most effective against lymphoma when combinations of different drugs are used. Different drug combinations, or *protocols*, are available and range in cost, effectiveness, and frequency of visits and side effects will depend on the protocol. As oncologists, we will help you decide which protocol is the best start for your dog.

The longest tumor control is generally seen with a combination of five to six different medications. Each drug has its individual method of damaging the cancer cells, which results in the longest period of remission and thus longest life expectancy. The drugs are used in rotation in order to limit side effects. *Induction* is the more intense period when treatments are given weekly and we closely monitor the patient's response to therapy. After the disease is under control, *maintenance* treatments continue to keep the disease in remission for as long as possible.

These medications typically do NOT cause significant side effects. You may be familiar with the side effects of chemotherapy in people. Fortunately, animals tend to experience few if any of the severe side effects seen in people. However, side effects may occur and symptoms can range from a mild, temporary decrease in appetite to anorexia, loose stools, vomiting and fever. Most dogs do not lose hair from chemotherapy, unless they are terriers or poodles. Again, most pets have no symptoms. *Our philosophy is that cancer patients should feel better, not worse, from their chemotherapy!*

Treatment – Radiation Therapy

Radiation therapy is most often used to treat locally aggressive cancers. While lymphoma is most often a systemic disease, it is occasionally localized and can respond well to radiation therapy in this setting. Recent trials have been conducted in using whole body radiation therapy, in addition to chemotherapy, for systemic lymphoma. The results are promising for achieving longer control than with chemotherapy alone. Studies are still ongoing to determine the ideal dose and schedule for radiation therapy in lymphoma patients.

Prognosis

Lymphoma is a rapidly progressive cancer and if untreated, can be fatal in 4-8 weeks. With chemotherapy, most dogs reach a complete remission and enjoy happy, healthy lives of one year or longer! The effectiveness of treatment depends on how advanced the disease is and whether your pet has other health problems. We are still learning about the factors that result in a wide range of life expectancy. As individuals, each of our patients will have a slightly different response and outcome. Our goal is to maintain the best quality of life possible!