

Lymphoma in Dogs

Kristi S. Lively, DVM, DABVP

BASIC INFORMATION

Description

Lymphoma (also called *lymphosarcoma*, *LSA*) is a common cancer of middle-aged and older dogs. It is a cancer of the white blood cells known as *lymphocytes*, of which there are two main types—B cells and T cells. Lymphoma may originate in any lymph tissue, including the lymph nodes (glands), spleen, liver, bone marrow, and thymus. LSA is not restricted to certain organs and may also affect the skin, eyes, central nervous system, gastrointestinal tract, liver, and lungs. It may be the most common cancer in dogs. This cancer can be aggressive if left untreated, but it often responds favorably to chemotherapy, adding months and sometimes years to the pet's life.

Causes

Even though this is a common cancer of people and dogs, it is not known why it develops. A genetic predisposition may exist, because certain breeds, such as the golden retriever, boxer, basset hound, Scottish terrier, bulldog, Airedale terrier, and Saint Bernard, seem prone to the disease.

Clinical Signs

Clinical signs depend on the area of the body affected. Widespread enlargement of the lymph nodes may be the only sign in dogs with the common multicentric form of LSA, but some dogs may also have enlargement of the liver and spleen. Other forms of LSA may cause skin lumps, sudden blindness, seizures, back pain, or shortness of breath. Fever, excessive drinking and urination, or abnormal bleeding can also occur.

Diagnostic Tests

Diagnosis of LSA can be easy if all external lymph nodes are enlarged or difficult if the tumor is in a less accessible organ. The tests performed depend on the location of the tumor, but the following may be recommended:

- A complete blood count, biochemistry profile, and urinalysis
- Fine-needle aspiration of a lymph node or mass, with examination of cells under the microscope (cytology)
- Biopsy of enlarged lymph nodes or other organs
- X-rays and/or an ultrasound to evaluate for internal organ involvement
- Bone marrow aspiration if bone marrow involvement is suspected
- Specialized testing to determine the type of lymphoma (B cell versus T cell)

TREATMENT AND FOLLOW-UP

Treatment Options

Treatment of lymphoma depends on the organs involved, but most cases require chemotherapy because the disease is widespread. A variety of chemotherapeutic protocols are available, consisting of combinations of oral and injectable medications. The protocol recommended often depends on the type of lymphoma (B cell or T cell), which organs are affected, and the personal and financial choices of the owner. (See handout on **Chemotherapy and Your Pet**.)

Treatment is started when the disease is diagnosed, even if the dog does not seem ill, because waiting may drastically reduce long-term survival. The goal of cancer therapy is to achieve long-term remission and good quality of life. Remission is achieved when the signs of disease have disappeared.

Follow-up Care

Frequent recheck visits are needed to administer some forms of chemotherapy and to monitor response to the medications. Laboratory tests are used to monitor for side effects of the medications and for evidence of spread of the disease. Sometimes x-rays and ultrasound studies are also repeated periodically to check the internal organs.

Prognosis

Prognosis is best in dogs that achieve complete remission, maintain remission, and tolerate their chemotherapeutic medications. Patients with B-cell lymphoma often achieve and maintain remission more successfully than dogs with T-cell lymphoma. Treatment of multicentric lymphoma in dogs has a 75-90% response rate, with average survival times of 9-12 months. Patients treated before they are feeling sick usually have better response rates.

Lymphomas involving other organs, such as the skin, the intestines, or the respiratory system, have lower remission rates. When LSA is complicated by high calcium levels (hypercalcemia), success rates also tend to be lower. In dogs that do not receive chemotherapy, survival time may be as short as 4-6 weeks. In these patients, oral prednisone may be used temporarily to alleviate some of the clinical signs.

Lymphoma eventually comes out of remission, with recurrence of clinical signs such as lymph node enlargement or spread of the cancer to other organ systems. The cancer may become resistant to the drugs that have been used, so new drugs may be chosen to try and rescue the animal and put the disease back into remission.