

# Canine Lymphoma

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## Introduction

Lymphoma (LSA) is one of the most common aggressive malignancies of dogs. Lymphosarcoma is another name for this disease. It is the most common hematopoietic cancer (cancer arising from blood cells) in dogs. The most common sites affected in the dog include the lymph nodes, liver and spleen. This malignancy can also affect other sites such as the bone marrow, skin, gastrointestinal tract and neurologic system. Many dogs with lymphoma are presented to the veterinarian because of detection of nonpainful swollen lymph nodes.

## Clinical Features

The initial clinical signs of Lymphoma are typically swellings in the areas of lymph nodes. Other symptoms can include weakness, poor appetite, lethargy and weight loss. When other areas of the body are affected, such as the gastrointestinal tract, symptoms related to that location are seen (eg vomiting and diarrhea)

Upon evaluation, clinical signs such as generalized lymph node swelling, enlarged spleen and/or liver, fluid accumulation in the thoracic or abdominal cavities, pale mucous membranes, and fever can be detected.

## Diagnosis and Staging of Lymphoma

History and physical exam findings can direct the search for the primary site of the LSA to specific regions. Fine needle aspiration cytology of enlarged lymph nodes can be performed and lead to the diagnosis. **“Staging”** tests to determine the effects of this cancer upon other areas of the body are recommended in all patients. Radiographs of the thorax are performed to assess the lungs, heart and lymph nodes. Abdominal ultrasound can be performed and a fine needle aspiration cytology of the liver and/or spleen can also achieve the diagnosis. Detection of intraabdominal lymph node enlargement, masses, thickened stomach or intestinal walls can be achieved noninvasively with ultrasound. Bloodwork and urinalysis are indicated to evaluate the general health status. Signs of systemic effects of the lymphoma, such as elevated blood calcium, anemia or changes in the white blood cells are important to evaluate in suspect LSA patients. Flow cytometry can determine the type of lymphoma cell present. A bone marrow aspiration biopsy can be helpful in select patients to achieve the diagnosis and assess the overall health of the patient’s blood system.

## What is staging of LSA and why is it important?

The clinical stage of lymphoma refers to the documented presence of tumor cells in locations other than the original (primary) site. Determination of the stage of the LSA is achieved by the same diagnostic tests mentioned above, such as thoracic

radiographs. The prognosis and anticipated success of therapy is dependent upon the stage, therefore the results of these diagnostic tests are very important. Stages I-V are described:

Stage I : One lymph node affected

Stage II: More than one lymph node affected on one side of the diaphragm

Stage III: Generalized lymph node involvement

Stage IV: Generalized lymph node involvement with liver and/or spleen involvement

Stage V: Bone marrow involvement. Also delineates “extranodal” effects, such as LSA that affects the skin, central nervous system.

The designation “a” versus “b” in the staging system above refers to the overall health status of the patient. “Lymphoma stage IIIa” eg designates a canine lymphoma patient with generalized lymph node enlargement who feels well. “Stage IIIb” refers to the patient with generalized lymph node enlargement who is not feeling well, such as one who has poor appetite or is lethargic.

## **Treatment**

The most important aspect of treatment for this aggressive systemic cancer is that chemotherapy must be utilized for the best outcome. **LYMPHOMA IS TREATABLE, BUT IS NOT CURABLE.** Chemotherapy will delay the progression of this disease in many patients for a significant amount of time, however the cancer usually returns (“recurs”) and results in terminal illness.

The stage and type of lymphoma usually will determine the success rate of therapy and the duration of “**remission**”. “**Remission**” refers to the control of clinical symptoms of the lymphoma.

Chemotherapy with multiple agents has demonstrated the most success in patients with lymphoma. When choosing a protocol for chemotherapy treatment, it is important to consider the potential benefits and toxicity associated with a particular treatment plan. Other important considerations for selecting the right treatment for your pet include cost, time required for appropriate administration of therapy and ultimately the goals of therapy, such as anticipated quality of life for your dog and your family.

## **What about LSA in my pet?**

Lymphoma is a devastating diagnosis in a companion animal. The prognosis and treatment are dependent upon the primary tumor location, your animal’s clinical condition and the stage of the tumor. The specific appropriate diagnostic testing as well as the possible therapy options will be discussed in detail with you. Although the guidelines for treatment of this cancer are well described in the literature, not every patient is the same. Our goal is to help with your understanding of what options are the best fit for your companion to ensure a good quality of life.