

# The Hope Line

Winter 2018

## The Lymphoma Low-down

Lymphoma is one of the most common cancers in dogs and cats, so we know you are seeing a ton of these cases! The [Lymphoma Low-down](#) will cover some common questions we encounter when discussing this disease so you can be as equipped as possible the next time you diagnose this cancer. In a nutshell, lymphoma is considered to be a systemic or liquid tumor that has access to everywhere in the body, which is why chemotherapy is the mainstay of treatment. Surgical biopsies are sometimes indicated, but this is typically reserved for cases where surgical intervention would improve quality of life, or when a diagnosis is not obtained with first line diagnostics. A positive note about lymphoma is that it is generally very responsive to chemotherapy, so we can improve and lengthen life in the majority of cases.

**Which diagnostics should you do?** [Cytology](#) of a peripheral lymph node or primary mass is generally sufficient to obtain a diagnosis since these cells love to exfoliate with needle aspiration. Most patients present with generalized lymphadenopathy and we assume all these nodes have the same disease process. So, generally submission of one representative lymph node is appropriate. Make sure to stain a “throw away” slide before you submit to confirm there is actual lymph node tissue on the slide! If a diagnosis of lymphoma is obtained on cytology, biopsy is not necessary for referral. Additional tests including flow cytometry and/or PARR may be helpful for confirmation when a diagnosis is not obtained, or for further classification of the type of lymphoma. [Flow cytometry](#) looks at the size of the lymphocytes and cell surface marker expression to differentiate between types of lymphocytes. You must have a fresh sample of cells in suspension. This is most useful when characterizing an already confirmed diagnosis of lymphoma (B vs. T cell, leukemia vs. lymphoma, low grade vs. high grade). [PARR](#) uses PCR technology to amplify DNA of the cells from the sample to see if they all have the same DNA sequence (i.e. clonal, cancerous) or different DNA sequences (i.e. polyclonal, reactive). PARR is most helpful in confirming a suspicious diagnosis of lymphoma. It can differentiate between B and T cell lymphoma by using different DNA primers. If the DNA is amplified with the B-cell antibody primer it is B-cell lymphoma, and if the DNA is amplified with the T-cell receptor primer, it is T-cell lymphoma.

**To steroid or not to steroid?** This is the most commonly encountered question we get! Yes, steroids are very helpful at alleviating clinical signs due to their direct cell-killing abilities against the lymphoma cells. The concern with prolonged prior steroid usage is upregulation of a drug efflux protein, called P-glycoprotein (Pgp, also known as the MDR-gene). An increase in Pgp can cause resistance against some chemotherapy drugs since it pumps the drug out of the cancer cells and minimizes contact time with the DNA (or other target protein) inside the cell, preventing the drugs from exerting their cytotoxic effects. We prefer no prior steroid usage prior to their consultation with us, [but](#) we understand that sometimes patients are too symptomatic to wait, especially if they present near a holiday weekend. In general, as long as an adequate sample of a representative lesion (enlarged lymph node, abdominal or thoracic mass, etc) has been taken, steroids are ok to start as long as they are planning to make an appointment with us within a week (ideally). As a reminder, make sure you stain a throw away slide to confirm a lymphoid sample is present!

**When to refer?** We are happy to see any and every confirmed case of lymphoma so that we can thoroughly discuss every option with the owners, regardless of whether or not they wish to proceed with chemotherapy. We are also usually very happy to see these cases even if a diagnosis has not been obtained but the clinical suspicion is very high. We realize that not every client will pursue chemotherapy, but our consultations give us time to discuss symptoms to monitor for that may indicate disease progression, and other palliative treatments owners can use to have more time with their beloved pet.



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**What should you tell the owner?** That lymphoma is a disease, not a death sentence. Yes, most of our patients succumb to the disease within a year of diagnosis, but the goal with chemotherapy is to promote a good quality of life for as long as possible. Lymphoma is generally very responsive to treatment, and we can push about 80-90% of patients into remission! Only about 20% of our patients end up having manageable side effects, with less than 5% have serious enough side effects to warrant hospitalization. Also, there are some types of lymphoma that have a much better prognosis (indolent, T-zone lymphoma, etc), so additional diagnostics may be warranted to define the type, anticipated prognosis, and appropriate treatment.

## Patient Highlight

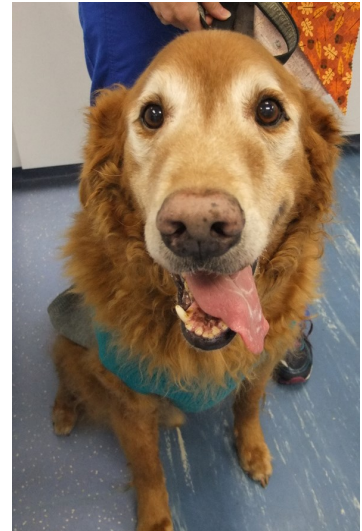
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### Meet Sport.

Sport is an 11 year old, MN Golden Retriever who presented with severe inguinal lymphadenopathy. Otherwise, he was completely asymptomatic. Fine needle aspirate confirmed high grade lymphoma, with the majority of the lymphoid population being lymphoblasts. Ordinarily, this is all we would need to feel comfortable with recommending maximally tolerated doses of a multiagent chemotherapy protocol. Flow cytometry submitted for immunophenotyping, however, confirmed T-zone lymphoma, an indolent form of the disease. He is currently on a regimen of chlorambucil/prednisone and doing FANTASTIC!

If you ever have any questions about which cases to refer, or what else you should do with respect to diagnostics or treatment prior to referral, please give us a call! We are more than happy to answer any questions you may have in a quick and convenient manner.

Closing out 2018 with a success story is a lovely thing! Wishing our referring veterinary community a Happy New Year!



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