



## **Canine Cutaneous & Mucocutaneous Lymphoma**

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Practice Limited to Oncology

Cutaneous lymphoma encompasses several different types of extranodal lymphomas including epitheliotropic (also called mycosis fungoides) and non-epitheliotropic. It can occur in the skin (cutaneous form) and/or involve the oral cavity and other mucocutaneous regions (mucocutaneous form). The vast majority of cutaneous lymphoma cases in dogs are epitheliotropic and of T-cell origin. Cutaneous lymphoma is an uncommon condition in dogs (<1% of all canine skin neoplasms and approximately 3-8% of canine lymphomas) and has no known cause. A rare subtype of progressive cutaneous lymphoma, called Sezary syndrome, occurs when patients develop leukemia, and have circulating neoplastic lymphocytes.

### Signalment:

Older dogs (range 9-11 years), with no sex or breed predilection, although some older studies have reported overrepresentation in Boxers, Golden Retrievers and Cocker Spaniels.

### Clinical Signs:

The cutaneous form has a variable appearance of progressive skin lesions ranging from alopecia, erythema, crusting, scaling, pruritus, ulcerations to mushroom-like lesions (hence the name mycosis fungoides). The mucocutaneous form generally consists of depigmentation around mucocutaneous junctions (i.e periocular etc) and ulcerative lesions and/or nodules in the oral cavity. Peripheral lymph nodes can be affected which can lead to a misdiagnosis of multicentric lymphoma. Cutaneous lesions can occur anywhere on the body, but tend to occur on dorsum, ventral abdomen and extremities.

Patients can be asymptomatic at diagnosis, or can be showing signs of pruritus and general discomfort including lethargy and decreased appetite. Hypercalcemia can occur as with other types of lymphoma, and hypercalcemic patients typically present with PU/PD and general malaise.

### Diagnostic Workup:

A thorough history to rule out other possible causes of skin disease including ectoparasites, seasonal and food-based atopy, etc. Patients should receive a minimum database (CBC/CHEM/UA) to assess overall health and rule out potential leukemia or other abnormalities. Skin cytology can be performed to rule out bacterial infection and can reveal presence of neoplastic lymphocytes, however skin biopsy with dermatohistopathology is required for a definitive diagnosis. Immunohistochemistry (CD4+, CD8+) can be performed to further characterize the neoplasm. Staging diagnostics include chest radiographs and abdominal ultrasound or CT. Organ involvement has been reported but is not common. Peripheral lymph nodes can also be involved and should be aspirated if enlargement or asymmetry is found on physical exam.

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### Treatment:

Treatment for cutaneous lymphoma involves glucocorticoids and chemotherapy. Chemotherapy can improve quality of life for patients and in several studies, also increases survival time. The most common treatment for cutaneous and mucocutaneous lymphoma is glucocorticoids combined with CCNU/Lomustine chemotherapy. Other chemotherapy drugs that have been studied include CHOP based chemotherapy protocols, single agent doxorubicin, liposomal doxorubicin, L-asparaginase, mastinib, and more recently Tanovea (rabacfosadine) with variable results. The author's opinion is to start with CCNU/glucocorticoids and consider other therapies if the patient fails to respond or comes out of remission. Additional medical therapies include safflower oil and retinoids.

External beam radiation therapy (typically with electrons) can be effective for particularly painful, chemotherapy-refractory lesions. Multi-modal therapy including use of glucocorticoids, chemotherapy and radiation therapy may result in more durable control of lesions.

If an owner is not interested in more aggressive therapies, the patient should be kept on an immunosuppressive dose of prednisone for palliative care. The patient should be examined regularly to monitor for quality of life and antibiotic courses can be used if secondary infections occur. Clients will need to be educated on monitoring quality of life at home for when humane euthanasia should be considered.

### Prognosis:

Most forms of cutaneous lymphoma are aggressive and a durable response to treatment is rare. The majority of cutaneous lymphoma patients are euthanized due to declining quality of life. Median survival times with no treatment range from 3-5 months depending on the severity of lesions at diagnosis. Treatment with single agent CCNU can increase median survival to 6 months and approximately 1/3 of patients with cutaneous lymphoma will achieve a complete remission. Additional studies are warranted examining CCNU combined with glucocorticoids as well as other chemotherapy protocols in a larger case series.

### References:

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