

Original Research Article

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## Surgical Management of Lymphoma in a Dog- A Case Report

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### ABSTRACT

#### Keywords

Surgical Management, Lymphoma, Histopathological examination

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A male Dog, breed German Shepherd age 3yrs approximate was presented with the history of anorexia, weight loss, muscular weakness, depression, polydipsia, polyuria and bilateral peripheral lymphadenopathy at the hospital. The blood picture of the animal showed normal blood counts as well as normal LFT and KFT. On histopathological examination of the tumorous growth extracted from the lymph node clearly showed Non-Hodgkin's Lymphoma that was surgically removed successfully.

### Introduction

Lymphoma is the most common hematopoietic neoplasm in the dogs representing 7-9 percent of all malignant neoplasms (Hammer and Couto, 1991). The annual incidence has been estimated at 24 per 100000 dogs (Dorn *et al.*, 1970), although a lower incidence has been reported in other surveys (Back-green, 1965; Parodi *et al.*, 1968). Dogs are often asymptomatic, but 20-

40% of dogs will have anorexia, lethargy, fever weight loss, vomiting, diarrhea and melena (Vail *et al.*, 2001). The clinical signs of canine lymphoma usually reflect the anatomical site affected, in this particular case there is excessive enlargement of pre-scapular lymph nodes, weight loss, anorexia, depression, polydipsia and polyuria. The main purpose of this study was to report on this type of canine lymphoma which is rare in every day practice.

### History and Observations

A 3 years German Shepherd male Dog was presented to the Government Veterinary Hospital, Dublana Distt Mahender Garh, Haryana with the history of anorexia, weight loss, muscular weakness, depression, polydipsia, polyuria etc. Body temperature was subnormal (99° F). On physical examination both the pre-scapular lymph nodes were enlarged extensively. On aseptic lymph node centesis, blood mixed aspirate was able to be collected with a sixteen-gauge sterile needle and syringe. Complete blood examination of the dog was conducted along with Liver function tests (LFT) and Kidney function test (KFT) and complete Urine

analysis to assess the changes and physiological status of different visceral organs.

### Treatment and Discussion

The complete blood count showed lymphocytosis but LFT as well as complete Urinalysis showed normal report however slight increase in blood urea levels was observed (Table 1). History, site, subcutaneous location, round shape of the growths made it suspect as benign growth. It indicated that the tumor is non-malignant in nature or metastasis is not happened yet i.e. early detection of the tumor.

**Table.1** Hemato-biochemical picture of the patient

Parameters	Obtained value	Normal range
1) TLC	12,600/ cu.mm.	5100-14100/cu.mm.
2) Neutrophils	74%	58-85%
3) Lymphocytes	22%	8-21%
4) Eosinophils	4%	0-9%
5) Serum bilirubin	0.6 mg/dL	0-0.3 mg/dL
6) Serum creatinine	1.2 mg/dL	0.5-1.7 mg/dL
7) Blood urea nitrogen	20 mg/dL	8-28 mg/dL
8) ALT	23U/L	10-109U/L
9) AST	31U/L	13-15U/L
10) ESR	5mm/hr	0-6mm/hr

Many types of treatment have been proposed for canine Non-Hodgkin Lymphoma but the most commonly used is chemotherapy. Single agent protocols were initially used (i.e. Doxorubicin, Cyclophosphamide), but nowadays multiple agent chemotherapy is the most common approach to NHL and canine Non-Hodgkin Lymphoma. Currently, response to chemotherapy in multicentric B-cell canine Non-Hodgkin Lymphoma is about 80%. Unfortunately, it is not curative but induces remission with a good quality of life for dogs. The median survival in B-cell canine Non-Hodgkin Lymphoma in treated dogs is about 12 months (Gavazza *et al.*, 2013). So, surgical excision of the growths

was opted for the treatment. Both Pre-scapular lymph nodes of the dog were surgically removed aseptically under general anesthesia using Inj. xylazine hydrochloride as sedative @ 0.5mg per kg bodyweight intramuscularly. Anesthesia was maintained by ketamine @ 5mg per kg body weight and midazolam @ 0.25mg per kg body weight combination as per dosage formulation given by Fossum (2007).

A Part of the growth was sent for histopathological examination for the evidence of any type of tumorous growth. However, the other reports were normal and there was no evidence of malignancy. The

owner was advised to keep the dog on Inj. Ceftriaxone and Tazobactam combination @ 20mg per kg bodyweight intramuscularly, Inj. Meloxicam @ 0.3mg per kg bodyweight intramuscularly, Inj. Mecovet XL 2 ml intramuscularly, Inj. Vit-C 2 ml intramuscularly, all these for 5 Days and Anti-Septic Dressing Daily for a faster recovery. No complication or infection was found post-operatively. Sutures were removed after 8 days and the dog was apparently healthy. Surgically resected mass was incised and the cut surface grossly appeared greyish brown and soft in nature. Histopathological study of the growth extracted clearly revealed the presence of non-Hodgkin's lymphoma (diffuse, large cell).

The haemogram in canine lymphoma is not usually diagnostic (Madewell and Theilen, 1987). Neutrophilic leukocytosis and lymphocytosis are common findings (Couto, 1985). The clinical staging of these canine lymphoma cases based on WHO criteria (Owen, 1980) could fit in stage-I. Nowadays, the ultimate therapy for both humans and dogs is vaccine treatment. In recent times the genetic vaccine Targeting Dog Telomerase (dTERT), based on Ad/DNA-EP technology (Adenovirus and DNA electroporation), has been found to induce strong immune responses and increased overall survival of dogs affected by B-cell lymphoma in comparison with controls when combined with a COP (corticosteroids, vincristine, and cyclophosphamide) chemotherapy regimen. No adverse effects that might be attributed to treatment have been observed in any patient. A dTERT-specific immune response has been induced in almost all the treated animals (Gavazza *et al.*, 2013).

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