

## CUTANEOUS LYMPHOMA IN A NONDESCRIPT DOG – A CASE REPORT

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**Abstract:** A seven years old non-descript female dog weighing around 20 kg with a history of hyperpigmentation, alopecia, erythematous plaques, multiple cutaneous nodules with intense pruritus was brought to the Madras Veterinary College Teaching Hospital. Abdominal ultrasonography revealed enlarged spleen with reticular pattern. Cytology from the skin lesions were suggestive of lymphoma. PARR assay and flow cytometry were confirmative of cutaneous form of lymphoma. Here we report a rare case study of cutaneous lymphoma in canine.

**Keywords:** hyperpigmentation, alopecia, pustular lesions, cutaneous lymphoma

Lymphoma or lymphosarcoma (LSA) has been identified as one of the most common, yet treatable malignancy among canine population, accounting for nearly 24% of all canine tumors (Vail and Young, 2007). Cutaneous lymphoma is one of the uncommon neoplastic condition in dog and man and can be subdivided into epitheliotropic and non-epitheliotropic types (Mineshige *et al.*, 2016). Epitheliotropic and non-epitheliotropic lymphoma comprise around 1% of the total cutaneous lymphoma cases (Fontaine *et al.*, 2009). Though etiology of cutaneous lymphoma is unknown, in man a chronic inflammatory process has been proposed to be the major cause for cutaneous T cell lymphoma (Fontaine *et al.*, 2009).

For an experienced clinician mere clinical features will suffice in suggesting the diagnosis. But to avoid overlap of the differential diagnosis, fine needle cytology from the lesion is preferred.

Immunophenotyping of lymphoma can be determined done by immunohistochemistry (IHC), PCR antigen receptor rearrangements (PARR) and flowcytometry (FC) (Thalheim *et al.*, 2013).

### Case History and observation

A seven years old non-descript female dog was brought to the Madras Veterinary College Teaching Hospital with history of cutaneous lesions for nearly 5 months including

hypotrichous to alopecic foci, alopecia, scales, erythematous plaques, multiple cutaneous nodules and intensive pruritus. The vital parameters were normal with normal behaviour. No enlargement of external lymphnodes were observed.

Complete blood count (CBC), blood smear, serum biochemistry revealed normal values except for the slight increase in serum calcium levels (11.96 mg/dl). Haematology investigation revealed WBC count 22,900/cmm and platelet count was 3400000/cmm. The neutrophil count was 84%. Abdominal ultrasonography revealed enlarged spleen with the reticular pattern. Radiography of abdomen and thorax did not reveal any abnormality.



Fig 1& 2: Clinical manifestation seen in cutaneous lymphoma

### **Treatment and discussion**

Cutaneous lymphoma can be solitary or generalized. Tobias and Johnston, 2012 reported that most of the described cutaneous lymphoma is of T cell type origin. Though cytology is used to screen lymphoma, immunohistochemistry is the standard diagnostic panel used to differentiate B cells and T cells.

A punch biopsy of the skin and lymph node biopsy was also performed, and the specimens were submitted to our laboratory for histological examination.

Fung *et al.*, 2002. in his study found that clonal proliferation typically occurs from a single lymphocyte, the population of neoplastic lymphocytes contains the same pattern of gene rearrangement. Hence peripheral blood samples were sent for polymerase chain reaction partial receptor rearrangement (PARR assay) which was confirmative for T cell rearrangement in the DNA of the case studied.

Since lymphoma is a systemic disease, its treatment involves systemic chemotherapy. (Thamm and Vail, 2013). The animal was treated by modified Madison Wisconsin university

chemotherapy protocol for lymphoma. This can increase the quality of life of the patient. Apart from this we need to treat secondary skin infections using topical therapy.

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