

A rare case of Chronic Eosinophilic Leukocytosis in a German Shepherd bitch

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Abstract

A 5 years old German Shepherd bitch was presented with history of recurrent fever at the teaching veterinary clinical complex of GADVASU, Ludhiana. Clinical examination revealed fever (105°F) and normal heart rate. Complete blood count revealed leukemoid response with massive absolute eosinophilia (40.45 x 10³/μL). Large number of immature eosinophils including band and metamyelocyte eosinophils were also seen indicating possibility of massive allergic inflammation or eosinophilic leukemia. Renal and hepatic function tests were within normal range. Radiography of the chest revealed no abnormality. Pyometra was ruled out on ultrasonographic examination. Regular deworming and vaccination of the animal was being carried out. No ova/cysts were observed on fecal examination of the patient. Animal was treated with antipyretic, antibiotic and antihistaminic drugs. Blood examination was carried out again at weekly interval which revealed that the leukemoid response was getting exaggerated with markedly increasing eosinophilia. For the treatment of leukemoid response, prednisolone therapy was initiated @ 0.5 mg/kg b.i.d. for 21 days and then it was tapered. Eosinophilic count was normalized thereafter till it was repeated a month later.

Keywords: Dog, Eosinophilia, Therapy

Eosinophils are important part of immune system in dogs and eosinophilia is described as increase in total eosinophil count in blood. Normal eosinophilic count in a dog is 0.75 x 10⁹/L (Mansfield, 2008). Eosinophilia is mainly caused by allergic, infectious, and neoplastic disorders in dogs. Eosinophils are several hundred times more in tissues than in blood. The degree of eosinophilia does not always reflect the risk of organ damage. Thus, organ involvement and its damage cannot be assessed by a high eosinophil count. When eosinophil count increases beyond 2.5 x 10⁹/L, this may be due to leukemoid response or due to some underlying cause eg. helminth parasites, intestinal disorder or respiratory infections. In the present communication, a case of leukemoid response without any helminthiasis, respiratory, dermatological or intestinal cause is being discussed.

Case History

A 5 years old German Shephard bitch was presented at the teaching veterinary hospital of Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, November, 2017, with history of recurrent fever for the last two weeks. GADVASU, Ludhiana. Clinical examination revealed that the bitch had fever (105°F) and heart rate of 138 beats per minute. Blood sample was submitted for complete blood count, biochemical and parasitological analysis. Faecal sample

was also submitted for examination of any ova/cyst.

Discussion

Complete blood count revealed leukemoid response with massive absolute eosinophilia (40.45 x 10³/μL) as depicted in Fig 1. Large number of immature eosinophils including band and metamyelocyte eosinophils were also seen indicating possibility of massive allergic inflammation or eosinophilic leukemia but neither any dermatological or respiratory allergic disorder was noticed in the patient.

Serum Alanine amino transferase (ALT), alkaline phosphatase (ALP), blood urea nitrogen (BUN) and creatinine levels were within normal range. Radiography of the chest was carried for pulmonary involvement but revealed no abnormality. Pyometra was ruled out on ultrasonographic examination. Fecal examination of the patient revealed no ova/cysts as regular deworming of the animal was being carried out. Microscopic examination of the Giemsa stained blood film did not reveal any protozoan or rickettsial infection. Lymph nodes were also not swollen. Organs that can be involved in eosinophilic diseases of dogs include the skin, lung, and gastrointestinal tract but in the present case all of these were not involved. The role of eosinophils in many eosinophilic diseases remains a mystery and German Shepherds may have an increased

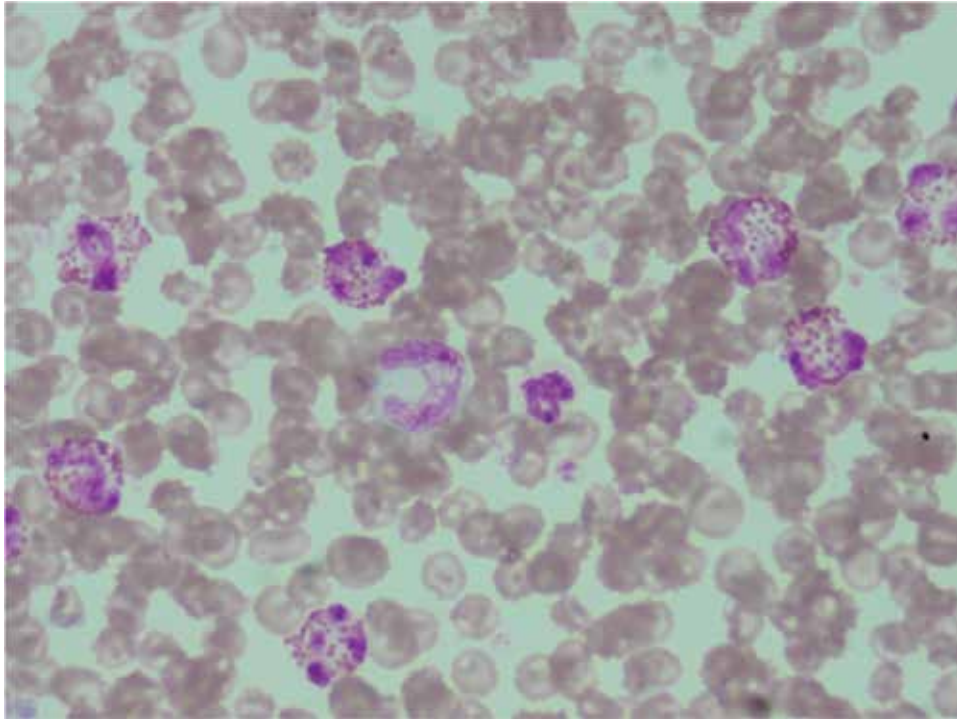


Fig 1. Eosinophilic leukemoid response depicted by presence of many eosinophils in a Leishman stained blood smear of a bitch (100 x)

incidence of exaggerated eosinophil responses to normal stimuli (Lilliehook and Tvedten, 2000)

The bitch was treated with antipyretic, antibiotic and antihistaminic drugs. Blood examination was carried out again at weekly interval which revealed that the leukemoid response was getting exaggerated with markedly increased eosinophilia. Then, for the treatment of leukemoid response, prednisolone therapy was initiated @ 0.5 mg/kg b.i.d. for 21 days and was tapered thereafter. Eosinophilic count was normalized thereafter till it was repeated a month later showing remarkable efficacy of prednisolone for treating eosinophilic leukemoid response.

References

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Received : 06.05.2019

Accepted : 24.06.2019