

# Lymphatic Leukemia in a Dog

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A SCOTTISH Terrier was presented to the clinic with the history that he had been ailing for about six weeks. The dog was examined and the following symptoms were noticed. All of the palpable lymph glands were enlarged. The abdomen felt full and hard. The dog had a peculiar type of breathing and his breath was very foul. There was a copious discharge from the purulent conjunctivitis. He was emaciated and did not exhibit the spirit of liveliness of a normal dog.

The dog lived thirteen days after he arrived at the clinic. During his stay here the blood counts were taken at various intervals. The chart below shows the time elapsing between each count, the actual count, the differential count and the normal count of a dog.

In addition to the blood examinations made, the dog's eyes were washed daily with boric acid, followed by an application of Merthiolate ointment 1-5000. Each day the dog became more depressed and odor from the mouth more unpleasant. Two of the last three days the dog was alive, he was given 3 cc. of nicotinic acid daily; but nothing was given the third day as the dog died before treatment could be administered or a blood count taken.

The prefemoral lymph nodes were as large as small cherries. The tonsils were hemorrhagic and were about four times their natural size. The spleen was enlarged and weighed 322 grams. A hematoma, the size of a half dollar, was found on this organ. The pulp itself was abundant and friable. The prostate was enlarged, cystic, and fibrosed.

Slides were made from the liver, kidney, spleen, a lymph node and prostate; and a microscopic study of these verified the macroscopic symptoms. Neither the lymph node nor the spleen had the normal histological structure of these organs. The splenic corpuscles and lymph follicles were completely displaced by a greatly increased number of lymphocytes. Both organs showed numerous hemorrhages and much hyperemia. There was also a considerable amount of hemosiderin in the lymph node as well as the spleen.

Grossly the liver had a mottled appearance which would remind one of the surface of grated nutmeg. On microscopic observation, the reason for this appearance was quite apparent. It was due to the massive infiltration of the liver with the same lymphoid cells which had destroyed the normal structure of the spleen and lymph node, and which also appeared

Time between counts	Hemoglobin normal 100%	Erythrocytes normal 6,160,000	Leucocytes normal 12,600	Neutrophils normal 57%	Eosinophils normal 10%	Basophils normal 1%	Monocytes normal 8%	Lymphocytes normal 25%
0	80%	3,260,000	53,000	35%	2%	0	17%	51%
12 hrs.	50%	3,240,000	83,000	....	...	...	....	....
24 hrs.	50%	3,180,000	.....	16%	0	0	13%	72%
48 hrs.	45%	2,640,000	55,940					
96 hrs.	45%	3,460,000	30,140					

The post mortem examination showed lymphoid hyperplasia. All of the lymph nodes showed hypertrophy, and the major ones taken as a unit weighed 859 grams.

in the blood in excessive numbers. In the blood vessels of the liver the lymphocytes appeared in a much greater proportion to

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## LEUKEMIA—

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erythrocytes than in normal blood. These dense collections of lymphocytes had no regular location with reference to individual liver lobules. In some cases the infiltrations were around the portal canals; in others, around the central vein; and in still other lobules, masses of lymphocytes were found between the central veins and portal canal. The liver cells that remained had been crowded so much by the masses of infiltrating lymphocytes that they had atrophied. The atrophy was accompanied by an increased amount of blood in the sinusoids. Grossly the kidney appeared to be infiltrated with lymphocytes in the same manner as the liver. Microscopically there was a focal intertubular infiltration with lymphocytes, but not to the same extent as was observed in the liver. This infiltration was accompanied by degenerative changes in the renal epithelium. Here also there was considerable hyperemia. The prostate

was removed and sectioned because it showed the hypertrophy which is so common among aged dogs. The section showed this hypertrophy to be due to two causes: first, a cystic adenomatous condition and secondly, the enlargement was due to massive focal infiltration of lymphocytes. These were the only organs from which slides were made, but one could conclude that sections made from the other organs would appear approximately the same.

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## DIAGNOSTIC LAB.—

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who are now students are graduate veterinarians and can take advantage of the facilities it has to offer. It would be well to remember that it is not degrading to the veterinarian to admit that it is impossible for him to make more than a tentative diagnosis without the use of laboratory assistance in those unusual and trying cases.

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