

EOSINOPHILIC LEUKEMIA: CASE REPORT

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Eosinophilic leukemia seems to be as rare in quadrupeds as in man. It has been reported in a pig, associated with whitish nodules in the kidney, and in an 8-year-old castrated cat which had a WBC count of 150,000 with 73% eosinophils. This cat lost energy, had vomiting and diarrhea with moderate anemia, and enlargement of the spleen and liver. There was no necropsy. In 2 cats, a 10-year-old spayed female and 7-year-old castrated male, both with eosinophilic enteritis, the signs were very similar; in one the WBC count was 11,950 with 39% eosinophils, in the other 75,000 with 48% eosinophils; both had 12 Gm Hb. They had emesis and diarrhea, the latter being tarry in the male, who had been sick longer. Intestines were thick and rigid. The female was killed at once, but the male was treated with ACTH and cortisone. He improved greatly but relapsed when the owner stopped medication, and by the time he was returned he was so weak that euthanasia was necessary.

Either diagnosis (eosinophilic enteritis or leukemia) seemed possible in the present case. The cat was 4 years old, spayed 8 months before; she had no history or evidence of parasitism, bronchial irritation or asthma to explain the eosinophilia. She had had loose dark feces for several weeks for no apparent reason and seemed otherwise normal. Penicillin was injected, and tablets containing neomycin, phthalylsulfacetamide, belladonna and pectin were dispensed. In 2 days emesis began and the diarrhea became bloody, at which time the WBC count was 136,000 with 44% segmented neutrophils, 12% bands, 9% lymphocytes, and 35% eosinophils; Hb was 9.8 Gm, hematocrit 31%; urine was normal. Radiographs, plain and with barium, were uninformative.

Tetracycline and novobiocin were dispensed but diarrhea continued. Prednisone was given, 2.5 mg b.i.d. because it had helped in eosinophilic enteritis, but emesis and bloody diarrhea immediately recurred. The cat was hospitalized, languid and almost anorectic. The only finding was a WBC count of 102,700 with 33% eosinophils, and hematocrit 26%. Marrow taken from the iliac crest had a myeloid:-

trythroid ratio of 13.4, with neutrophils 64.5% and eosinophils 24.2%. The puncture site became infected but antibiotic and supportive treatment allayed the fever and improvement followed; the cat started eating again.

A week after admission the blood picture was improved: WBC count 69,100, eosinophils 14%. Corticosteroid treatment was repeated, 25 mg prednisolone b.i.d., but the feces became mucoid and bloody at once and remained so. The cat stopped eating and rapidly weakened. At 3 weeks after admission anemia still persisted, the WBC count had risen to 89,600 and eosinophils to 83% with increasingly immature forms. The liver was palpable and the spleen large. The M:E ratio was 14.6, neutrophils 22.5% and eosinophils 66.7%. Because eosinophilic leukemia seemed likely the cat was euthanized.

At necropsy the intestine was empty, with the consistency of rope, and the mucosa and submucoea were heavily infiltrated with eosinophils. Extensive ulceration and erosion of the mucoea had occurred at the terminus of the colon, where inflammatory cells had also infiltrated. The 2 kidneys weighed 80 Gm and had a number of pale nodules on their surfaces and in the cortices, up to 1 cm in diameter, so packed with eosinophils as to destroy the architecture. Eosinophils in all stages of development were disseminated throughout, and in tubular areas lymphocytes were also present. The liver was normal in weight, mahogany in color. Eosinophilic infiltration was diffuse but moderate. All vascular channels were crowded but the structure was not obliterated.

The spleen was large, red, firm, with moderate infiltration by neutrophilic and erythroid cells as well as eosinophils. The mandibular, retropharyngeal and colonic lymph nodes were gray-tan and similarly cellular. The semilunar valves of the left heart were knobby and thickened, with linear infiltration by eosinophils and lymphocytes in their endocardium; that of the ventricle was also infiltrated. The femoral marrow was red and moist throughout, hypercellular with eosinophils overwhelming the erythroid foci. Most were myelocytes, and mitosis was fairly common. There were some areas of necrosis.

It is evident that corticosteroid therapy benefited the cat with eosinophilic enteritis but was decidedly detrimental to this cat, causing vomiting and bloody diarrhea. The accumulating signs of leukemia were: refractory anemia; increasing numbers of young eosinophils in the blood, with occasional primitive forms; the increasing proportion of all stages of eosinophils in the marrow, and enlargement of the spleen. The malignancy of the disorder was obvious at necropsy.

COMMENT: This is an excellent write-up of an unusual disorder, and illustrated with clear photographs and photomicrographs. — M. K. Dunlap, DVM.