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Lymphosarcoma in a Raccoon, *Procyon lotor* (L.)

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Lymphoid tumors are among the most common types of neoplasms of domestic animals (Moulton and Dungworth, 1978, *In* Tumors in Domestic Animals, Moulton (ed.), Univ. California Press, Berkeley, California, pp. 150–204). Prevalence among dogs and cats has been estimated at 24.0 and 41.6 per 100,000, respectively (Dorn et al., 1957, Am. J. Vet. Res. 28: 993–1001). These tumors have been classified according to cytologic and anatomic criteria (Jarrett and Mackey, 1974, Bull. W.H.O. 50: 21–34). This report describes a lymphoblastic lymphosarcoma involving both kidneys, brain, and meninges in a raccoon.

An adult, female raccoon was submitted dead with a history of foaming at the mouth and possibly biting a dog. Gross examination revealed a poorly fleshed but lactating animal with several ticks on the ears and head. The kidneys were bilaterally enlarged to twice normal size, with the cortical cut surface mottled white in appearance. The liver was enlarged and mildly fibrotic. The animal was negative for rabies by indirect fluorescent antibody test and mouse inoculation.

Histologically, both kidneys contained dense sheets of cells invading the cortex (Fig. 1), composed of large (14–17 μm) neoplastic lymphoblasts with scant, basophilic cytoplasm and large nuclei with coarse chromatin and a single prominent nucleolus. A small proportion of the cells had deeply indented nuclei. Three to five mitotic figures per high power field were seen. Neoplastic lymphoblasts were found in cerebral and cerebellar leptomeningeal spaces. The infiltrates were especially large and diffuse in the cerebellum where they amounted to a 10 to 15 cell wide layer (Fig. 2). Virchow-Robin spaces of both

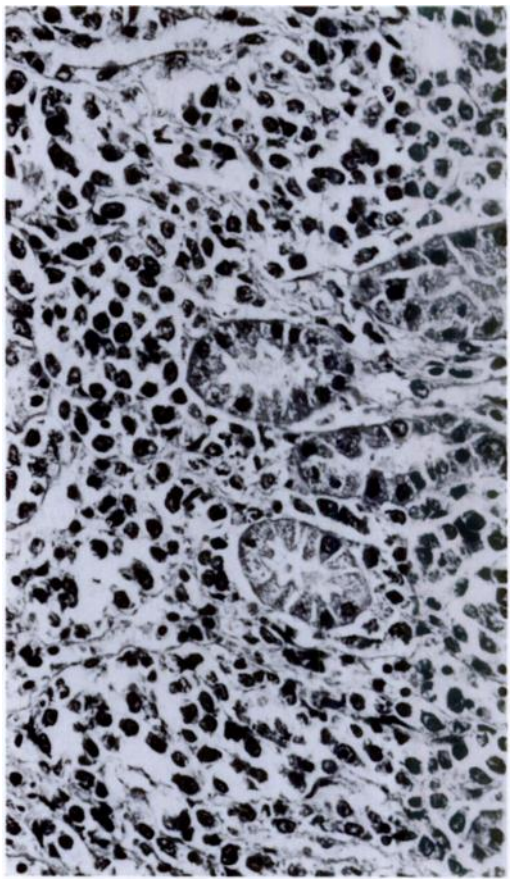


FIGURE 1. Photomicrograph showing neoplastic lymphoid cells surrounding normal renal convoluted tubules. H&E. ×250.

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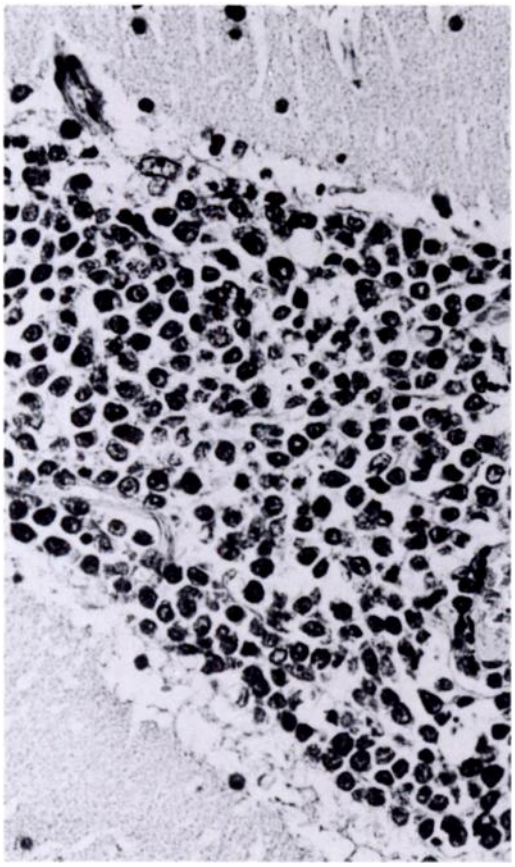


FIGURE 2. Photomicrograph of cerebellar sulcal leptomeninges diffusely invaded by neoplastic lymphoid cells. H&E. ×250.

cerebrum and cerebellum contained wide cuffs of tumor cells. No lymphoid tumors were seen in lymph nodes, spleen, liver, and other tissues. Because of the size of renal infiltrates and absence of involvement of nodes, liver, and spleen, it was felt that a primary bilateral renal lymphosarcoma was present with cerebromeningeal metastases, following a pattern often present in feline lymphosarcoma (Nielsen and Holzworth, 1953, J. Am. Vet. Med. Assoc. 122: 189–197).

Other findings included adults and eggs of *Capillaria procyonis* in lingual epithelium and several cestodes in the small intestine. A few hyperplastic nodules of the adrenal cortical epithelium and pancreatic acinar epithelium were present. The liver had mild diffuse pericholangial fibrosis. Several parasitic granulomas, compatible with larval migrans lesions, were found in the muscularis and submucosa of stomach and small intestine.

Despite the high prevalence of lymphosarcomas in domestic animals, they are rare in wildlife (Douglass, 1979, Vet. Med. Small Anim. Clin. 74: 1637–1641; Montali, 1980, *In* The Comparative Pathology of Zoo Animals, Montali and Migaki (eds.), Smithsonian Institution Press, Washington, D.C., pp. 531–542). The files of the Northeastern Research Center for Wildlife Diseases from 1948 to 1982, covering over 450 raccoons, contain only two other tumors, a cutaneous fibroma and a cerebral astrocytoma (Diters et al., 1978, J. Am. Vet. Med. Assoc. 173: 1152–1153). Hodgkin's disease, another neoplasm of lymphoid tissue, has been reported in the striped skunk (*Mephitis mephitis*) (Smith and Baker, 1983, Vet. Pathol. 20: 223–229).

This report represents the first recorded lymphosarcoma in a wild raccoon. Paraffin-embedded blocks of tissue have been deposited in the Armed Forces Institute of Pathology, Washington, D.C. 20306, USA (AFIP#1915520).

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