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Hepatozoon sp. INFECTION IN MINK FROM SOUTHWESTERN ONTARIO

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Abstract: Schizonts of Hepatozoon sp. were found in the lungs of 10 of 18 (56%) mink (Mustela vison). Schizonts were located in microgranulomas within the pulmonary parenchyma, occasionally in peribronchiolar or perivascular sites.

CASE HISTORIES AND NECROPSY RESULTS

During the course of histologic studies of Paragonimus kellicotti infection, schizonts of a protozoan parasite were found in the lungs of 5 of 11 mink (Mustela vison). Examination of tissues from seven other mink collected at this time and in the same areas of southwestern Ontario revealed protozoa in five additional animals. Samples of lung, liver, kidney, spleen and heart were usually available from each mink. Schizonts were located in microgranulomas within the pulmonary parenchyma (Fig. 1), occasionally in peribronchiolar or perivascular sites. Focal aggregations of lymphocytes, macrophages, plasma cells, and eosinophils were associated with small groups of schizonts. Two types were differentiated: (1) subspherical schizonts, 22-29 μm X 19-24 μm, containing a single row of 18-24 macromerozoites around the perimeter; and (2) larger oblong or spherical schizonts, 29-38 μm X 19-24 μm, with 34-38 micromerozoites located throughout the organism (Fig. 2). These structures resembled the Y- and X-schizonts of Hepatozoon spp.1,2,8 Merozoites or gametocytes engulfed by macrophages were frequently seen in microgranulomas in the pulmonary parenchyma (Fig. 3 and 4). These stages were also evident in similar foci of adipose tissue adjacent to lymph node and skeletal muscle in one mink and in perirenal fat in another. There was a schizont surrounded by mononuclear cells in a centrolobular site in hepatic parenchyma of a single animal. Merozoites were found within macrophages in a focus of lymphoid tissue in a portal area of the same liver.

Hepatozoon sp. has not previously been recorded in mink and the location of schizonts in the pulmonary parenchyma is unusual. Schizonts of other Hepatozoon spp. have been identified in the myocardium, skeletal muscle, lungs, and liver of several species of wild mammals in southern Africa.1

Although the number of mink examined was small (18), the high prevalence of infection (56%) and the fact that hepatozoonosis in raccoons has not been found in this area suggests that this organism may be a species different from H. procyonis described from raccoons.2

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FIGURE 1. A focus of Hepatozoon sp. schizonts in the pulmonary parenchyma of a mink. Infiltrations of macrophages, lymphocytes and eosinophils form a microgranuloma around the schizonts. H&E X 380.

FIGURE 2. Morphology of the X (upper) and Y (lower) schizonts of Hepatozoon sp. in the microgranuloma of Fig. 1. H&E X 1550.

FIGURE 3. Hepatozoon merozoites engulfed by macrophages (arrows) in a microgranuloma in the pulmonary parenchyma of mink. H&E X 1550.

FIGURE 4. High power magnification of a single merozoite in a macrophage (from Fig. 3). H&E X 3380.

LITERATURE CITED


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