Spherophorus necrophorus

Infection in Mink

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Sporadic outbreaks of *Spherophorus necrophorus* infection in mink are quite commonly observed. One animal, several animals, or a large portion of a herd may be affected. A typical outbreak of this disease is that observed by Dr. J. A. Hunt, Winthrop, Iowa, in a group of mink from which specimens were submitted to the Iowa Veterinary Diagnostic Laboratory.

This herd of mink was being raised under better than average conditions of environment, management and nutrition. The animals had been vaccinated for distemper and botulism. The disease appeared in those mink which were about 6 months of age. The course of the disease was very rapid. Anorexia was the first symptom noted. This was followed by depression and death. The mink were only observed to be ill for a period of 24 hours. A mortality of 5 per cent was experienced.

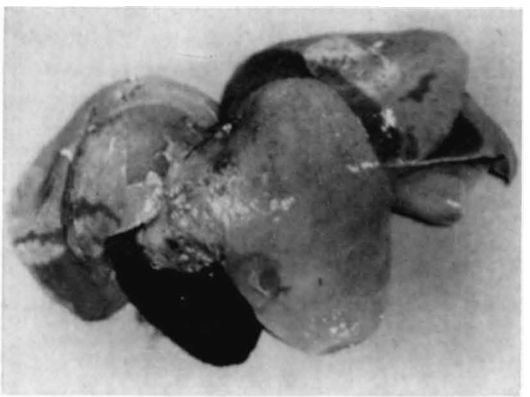

Fig. 1. Infarction of lobe of liver.

Postmortem examination revealed the mink to be in a good state of flesh. The most prominent lesion was the infarction of the liver which involved an entire lobe or a major portion of a lobe. The red infarcted lobe stood out in sharp contrast to the other lobes which were a yellowish-orange color due to fatty degeneration (Fig. 1). A thick layer of fibrin covered the surface of the liver. An acute diffuse fibrinous peritonitis was present. The peritoneal cavity contained about 3 cc. of a serofibrinous exudate.

Histological examination of the liver revealed typical areas of coagulative necrosis that were of the type characteristic of *S. necrophorus* infection. The border along the necrotic area contained only a few leukocytes which is characteristic of a *S. necrophorus* infection. When the necrotic area was stained with Giemsa or methanamine silver it was found to contain myriads of organisms which had a beaded appearance and occurred singly, in pairs, or in chains (Fig. 3). These bacteria were Gram-negative.

The lungs contained multiple white foci (Fig. 2) that measured from those which were just visible to others that measured 3 mm. in dameter. The necrotic foci were scattered uniformly throughout both lungs. In addition, there was an acute edema and congestion of the lungs, and the trachea and bronchi were filled with white foam. About one cc. of serous exudate was present in each pleural sac.

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Microscopic examination of the lung revealed multiple areas of coagulative necrosis typical of *S. necrophorus* infection.

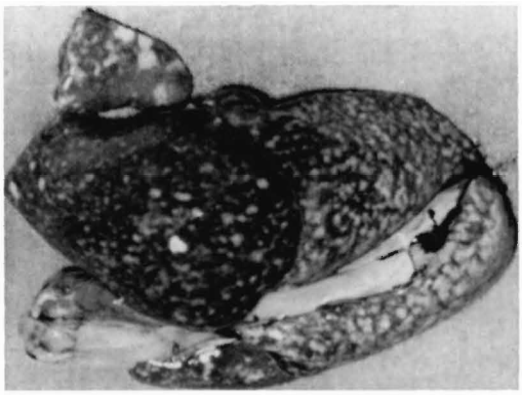

Fig. 2. Pulmonary lesions.

The spleen, as the result of hyperplasia, was about twice its normal size. Its surface was covered with a layer of fibrin. Histological examination of the spleen revealed numerous microfoci of coagulative necrosis and, like the liver, these foci of necrosis were not surrounded by zones of leukocytes.

No renal infarcts were observed. Microscopic examination of the kidneys did not reveal the foci of coagulative necrosis observed in other organs. There was fatty degeneration and coagulative necrosis of the renal tubular epithelium. In addition, a subacute interstitial lymphocytic nephritis

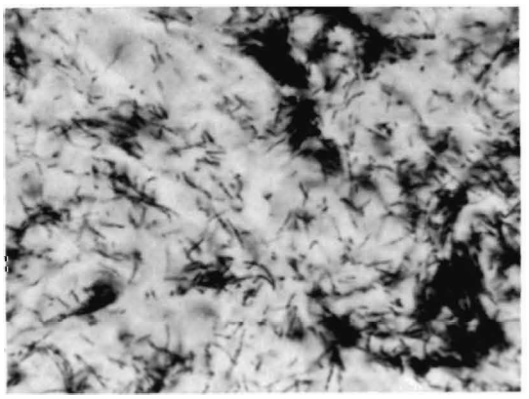

Fig. 3. Stained necrotic area.

was observed. The cellular exudate, arranged in a radial manner, had been present for some time and probably had no association with the present acute illness. Interstitial nephritis is quite common in mink.

All of the mink showed an acute diffuse hemorrhagic gastroenteritis. Although a primary site of invasion was not observed, the infection probably originated from the gastrointestinal tract and was carried to the liver by the portal vascular system. In the liver the organism caused massive infarction. This was followed by invasion of the blood vascular system, septicemia and the appearance of multiple foci of coagulative necrosis in many organs.

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