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Pacheco’s Disease

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Introduction

Pacheco’s disease is a viral infection to which only psittacine birds are susceptible. The susceptible birds are often young and affected birds usually have been stressed. This disease occurs worldwide and is also known as inclusion body hepatitis of psittacines. The order Psittaciformes (psittacines) characteristically has curved beaks and feet in which 2 toes are forward and 2 toes are back. Common pet birds in this order include: parakeets, parrots, macaws, cockatoos, cockatiels, lovebirds, lorikeets, and conures. Man and poultry are not affected by Pacheco’s virus.

History

Dr. Genesio Pacheco, a veterinarian working at the Biological Institute of Sao Paulo, Brazil, in 1930 first described this disease. In 1932 a virus was determined to be the causative agent and Pacheco’s disease was so named in 1933. In 1975, Dr. C.F. Simpson identified the virus as a Herpesviridae causing hepatic necrosis and eosinophilic intranuclear inclusions in the hepatocytes. Since then, outbreaks have been reported worldwide.

Clinical Signs

The clinical signs usually follow a definite pattern. Yellowish watery diarrhea occurs 1-2 days before death with depression only hours before death. Frequently there may be no diarrhea, with death occurring 2-4 hours after the depression phase. This phase may be characterized by anorexia, lethargy, inactivity (reluctance to move), ruffled feathers, frequent prolonged closing of the eyes (droopy eyes), and a preference for the cage floor as opposed to the perch. While Pacheco’s disease should be suspected, these clinical signs are nonspecific and may be inconsistent or subtle. If the depression phase is missed, death may be the only sign. Acute death is the hallmark of Pacheco’s disease; therefore, a thorough andmeticulous necropsy should be performed.

Post Mortem

The necropsy may show no significant lesions. More often, however, affected birds will have a slightly discolored liver with petechial hemorrhage and tiny focal areas of necrosis. Some birds show only a very subtle diffuse mottling of the liver due to centrlobular necrosis. Additional findings may include a swollen spleen with hemorrhage and necrosis, swollen kidneys, enteritis, and areas of hemorrhage on the heart muscle. There are also reports of respiratory and neural lesions.

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Diagnosis

Histopathology is required to confirm any presumptive diagnosis of Pacheco’s disease. Even with no apparent gross hepatic lesions, a diffuse necrosis of hepatic parenchyma and hemorrhage is present. Intranuclear inclusion bodies in the hepatocytes is the pathognomonic finding. Occasionally, intranuclear inclusion bodies in the renal tubular epithelium and gut epithelium may also be found. There are also reports of neural and respiratory lesions. The inclusions can be a solid basophilic body filling the entire nucleus or an eosinophilic centrally located body separated from the margination of chromatin by a clear halo. The lesion diagnosis should be made by an avian histopathologist as “a diffuse, necrotizing inclusion body hepatitis with hemorrhage, suggestive of Pacheco’s disease.” Virus isolation is the ultimate method to confirm the Pacheco virus. This may be done on frozen hepatic, renal, intestinal, and fecal samples.

Transmission and Infection Source

The virus is shed in the feces and usually transmitted orally through contaminated food or water or preening contaminated plumage. The disease cannot be transmitted unless there is fecal contamination.

There are two sources of the Pacheco’s virus: asymptomatic carriers and shedding sick birds prior to dying. Conures, especially Nanday (Nandayus Nenday) and Patagonian (Gonoliseus paragonus) conures from Panama, are notorious asymptomatic carriers of the Pacheco virus. These conures are totally resistant to the disease but harbor the virus.

Incubation Period

There is a variable incubation period. Large psittacines may show clinical signs within 4 1/2 days post exposure. However, in other cases the incubation period may extend into years, with clinical signs developing after severe stress.

Treatment

There is no treatment of Pacheco’s disease. Birds which have the virus and develop clinical signs always die. This is not a common disease seen by veterinarians antemortem. Due to the acute non-descript nature of this disease with rapid death, most veterinarians are presented with a necropsy specimen. Therefore, good postmortem techniques with proper histopathology are essential.

Prevention

Standard isolation procedures should be used on any newly acquired bird. That is, all new birds should be isolated and observed for a minimum of 6 weeks. Asymptomatic carriers will circumvent this protective measure. Since transmission occurs via the fecal - oral route, proper sanitation methods should be used. Some recommendations are as follows: use wire bottom cages so feces will fall out of the cage, fit food and water containers with a hood, place all perches at the same height, and avoid overcrowding or stressing birds. Sentinel birds (parakeets) may be used to detect shedders. An ELISA test for the Pacheco’s virus is still in the experimental stage.

Vaccine

No commercial vaccine is currently available for this disease. Research on developing a vaccine is being conducted at the University of Florida Veterinary School and Davis, California.

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