Proventricular Dilatation Disease

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Proventricular Dilatation Disease (PDD) is known by many names, including Macaw Wasting Disease and Neuropathic Gastric Dilatation. Considered to be caused by avian bornavirus, PDD is contagious and can result in high mortality.

What is PDD?

Proventricular Dilatation Disease is a disease of the nervous system and digestive tract of birds. Some birds may only show signs of nervous system disease, others will show signs related to the digsetive system. To understand this disease, one needs to know more about the digestive system in birds. The proventriculus is the glandular stomach, directly connected to the esophagus and the place where gastric juices are secreted. From there, food is passed to the ventriculus, which is the muscular stomach or what most people know as the gizzard. In PDD, the nerves that supply the muscles of the proventriculus, ventriculus, and other parts of the digestive system are affected. As a result, the food does not pass through the organs as it should. Birds with PDD are unable to absorb nutrients due to the destruction of gastric motility and secondary improper digestion. It is now believed that PDD is associated with an avian bornavirus infection. The signs of the disease are caused by the virus as well as the reaction of the body's immune system against the virus.

Which birds are susceptible to PDD?

Young or old, imported or domestic, and male or female birds are equally at risk for PDD. For unknown reasons, a higher incidence of PDD is seen in macaws, cockatoos, African Grey Parrots and conures, although any of the psittacines are susceptible to this disease. Some non-psittacine birds, such as toucans, canaries, and weaver finches have been suspected of having this disease.

What are the signs of PDD?

A bird with PDD will be depressed, regurgitate, pass whole seeds in the feces, and often show progressive central nervous system signs. These can include ataxia, the inability to perch, head tremors, and paralysis. Seizures may actually be the first presenting sign before any signals of gastric upset are evident. Eventually, due to lack of nutrition because of the body's inability to effectively digest and assimilate food, affected birds loose the bulk of their pectoral muscle mass and the keel becomes very prominent, hence the term "wasting" disease. PDD can also masquerade as lead or zinc poisoning, foreign body ingestion, and a few other maladies, so correct diagnosis is important.

How is PDD diagnosed?

Diagnosis is generally based on history, signs, and evidence of an abnormal proventriculus. Contrast radiography using barium will most often show a greatly enlarged proventriculus, and often, a fairly normal ventriculus. Blood tests are available to test for avian bornavirus, which is believed to be the cause of the disease. Interpreting results from these tests can be difficult since birds can be infected with the virus, without it causing disease. So a positive test does not necessarily mean the signs we are seeing in the bird are actually caused by bornavirus.

What is the treatment and prognosis?

The prognosis is poor. Nonsteroidal anti-inflammatory drugs (NSAIDS) such as meloxicam or Celebrex are used. The bird may need to be placed on a special diet. The bird should be kept in a stress-free environment, and may need to be treated with antibiotics to avoid secondary bacterial infections.

A bird with PDD should be placed in strict isolation, and have no direct or indirect contact with other birds.

Often, birds do not show any signs of illness until they are, in fact, very sick. In birds, a "wait and see" attitude can take a turn for the worse very quickly. Any time you suspect illness in your bird, consult your avian veterinarian.

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