PROVENTRICULAR DILATION DISEASE AND AVIAN BORNA VIRUS

Proventricular dilatation disease (PDD) was first recognized in the late 1970's in macaws imported into Europe and the United States. It is also known as macaw wasting disease, neuropathic ganglioneuritis, lymphoplasmacytic ganglioneuritis and psittacine encephalomyelitis.

The disease has been identified in over 50 different avian species including psittacines, waterfowl, raptors and passerines.

CLINICAL SIGNS INCLUDE:

- regurgitation
- diarrhoea
- undigested feed in droppings
- chronic weight loss
- ataxia
- tremors
- seizures
- feather picking behaviour

Studies of disease outbreaks suggest a faecal-oral route of transmission.

Traditionally a presumptive diagnosis was based on history, clinical signs and radiographic evidence of proventricular dilatation.

A definitive diagnosis of PDD can only be reached if histological findings of lymphoplasmacytic ganglioneuritis are identified on crop/proventricular biopsies or following necropsy.
To aid in successful diagnosis, a complete set of tissues should be submitted for histopathology, including all areas of the gastrointestinal tract, brain, spinal cord, adrenal gland and heart.
Histologically PDD lesions suggest an autoimmune host reaction similar to human neuropathies such as Guillain-Barré syndrome.

A viral aetiology triggering such an event has been suspected for a number of years.
Recent work by two independent groups using high throughput molecular methods, has identified viruses belonging to the family bornaviridae in samples from affected birds.

Following transmission studies using isolated strains of avian borna virus (ABV) to induce PDD in clinically healthy parrots, it is now widely accepted that ABV is indeed one of the main possible causal agents of PDD.

In the investigation of avian borna virus infection, it is recommended both serology and PCR tests be used in tandem. Due to the fact borna virus can be shed intermittently via the gastrointestinal tract, positive cases may be missed by using PCR alone. A positive test on either PCR or serology indicates that the bird is infected with ABV.

Unfortunately no numeric specificity or sensitivity is available as yet, however, the PCR is highly specific in that it generates one and only one amplification product that is the intended target sequence and the antibody detection is specific to ABV, therefore, it would be expected to be >98%. More data will become available as we do more testing.

Samples required are for serology, a minimum of 0.3ml serum or Heparin plasma and for PCR, cloacal and choanal plain swabs.

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