

Psittacine Beak and Feather Disease

Animal Health Management for Veterinarians and Bird Owners



March 12, 2019: Veterinarians who work with exotic birds, as well as the Chief Veterinary Office (CVO), have observed an increase in reporting of psittacine beak and feather disease (PBFD) in Winnipeg over the last three months. The spread of the disease may be linked to bird movements from one or two exotic bird collectors. The following information is meant to assist veterinarians and bird owners who may be concerned about the spread of PBFD.

What is PBFD?

Psittacine beak and feather disease (PBFD) is caused by psittacine circovirus. PBFD is common to parrots and is potentially a deadly virus.

Who are the susceptible hosts?

There are two strains of the circovirus, type one and type two.

- PCV-1 is most common in cockatoos, lovebirds, African grey parrots, ring necked parakeets and eclectus parrots.
- PCV-2 is common in lorikeets, lories and lovebirds. It has less severe effects and affected birds may recover.

The infection is not known to be a threat to humans.

How is PBFD transmitted?

The virus is readily shed through faeces, feather dander and secretions. Ingestion and inhalation of air or food contaminated by feather or fecal dust is most common. The virus will affect all of

the alimentary tract, liver and the bursa of fabricius.

What are the effects?

Age at infection is an important factor in the susceptibility of the animal to the disease, allowing for three forms:

1. Peracute in neonates. Younger birds have a faster progression of the disease.
2. Acute in young fledging birds during initial feather formation.
3. Chronic in birds undergoing their first molt (aged six to 12 months).

What are the clinical signs?

Peracute: Signs include septicaemia, depression and rapid death.

Acute: Signs include depression and dystrophy of the feathers. Death may result, normally within one to two weeks if a chronic form of the infection is not pursued.

Chronic: Progressive clinical signs can range from months to years, and can include abnormal feather and beak growth, weakened immune system and ultimately, death.

After each molt, feather characteristics will become worse. Beak abnormalities that can develop include elongation, fractures, palatine necrosis and oral ulceration. Other symptoms include scaling and thickening of the skin.

The virus has an immunosuppressive nature and one should expect death within six months to two years after clinical signs display. Death is normally a result of a secondary infection including bacterial, fungal, parasitic or viral.

One of the first signs to note is destruction of powder down (fine powder produced for feather health maintenance) and contour feathers. After this, the beak will appear glossy, since the powder is responsible for the matte appearance.

How do you diagnose PBFD?

The best way to diagnose PBFD is with a DNA probe test done on whole blood for the detection of viral DNA. A skin or feather biopsy through DNA in situ hybridization may be conducted for elimination of other possible causes.

A second method, which attains quantitative results, includes Haemagglutination (HA) and Haemagglutination inhibition (HI) assays. HA titres exceeding 640 HAU/50 µl confirm PBFD infection. HI measures the antibodies in the blood and inversely relates to HA. A bird with a high HA and low antibody level will normally represent a clinical case.

What if you get a positive test result with an asymptomatic bird?

If test results are positive, but the bird is not displaying any clinical signs, the bird should be retested within 90 days. A retest is done to distinguish between chronically infected and transiently infected birds.

Even asymptomatic birds should be isolated as viral shedding can still occur before observable symptoms are displayed.

Is there treatment?

There is no treatment aside from supportive care in a stress-free environment. If secondary infections arise from a weakened immune system caused by the virus, an antimicrobial prescription should be attained from your avian veterinarian.

Once clinical signs are apparent, euthanasia is recommended to prevent viral spread and to eliminate suffering as the virus is commonly fatal.

How do you prevent PBFD?

Work with your veterinarian to establish a flock or individual bird status for the disease. Infected birds should be isolated away from uninfected individuals.

How to control and disinfect PBFD?

If disease is suspected, the caretaker should have no contact with outside birds. Clothing, body surfaces, bird carriers, feeding and nest materials that may be contaminated can be modes of transmission and should be properly

cleaned or disposed of. Items such as perches and toys should be discarded, as proper disinfection cannot be achieved.

Contaminated zones should be washed with Virkon or products containing sodium hypochlorite solutions and left to dry for long periods, preferably in direct sunlight. This cleaning regime should be completed three to four times. Air systems should also be cleaned, as they can become infected through feather dust in contaminated premises.

Additional resources

- Starkey, S. 2010. Psittacine Beak and Feather Disease (PBFD) - Veterinary Partner - VIN. Veterinarypartner.vin.com. Available from:
<https://veterinarypartner.vin.com/default.aspx?pid=19239&catId=102911&id=4952964>
- Ritchie, Branson. 2011. Psittacine beak and feather disease. American Association of Zoo Veterinarians Infectious Disease Committee Manual.
- Greenacre, Cheryl. 2017. Psittacine Beak and Feather Disease-Bird. Avian and Exotic Animal Dermatology

Contact us

For more information, contact your veterinarian or the Chief Veterinary Office at
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