

## Psittacine Beak and Feather Disease

PBFD is caused by a relatively simple virus which infects and kills the cells of the feathers and beak. The virus also kills the cells of the immune system. Consequently many diseased birds succumb to bacterial and other infections.

The psittacine circovirus only causes problems for psittacine birds (parrots). As far as we know, no other bird or animal species is susceptible. A similar PBFD-like disease recently seen in doves is probably caused by similar but antigenically different circovirus.

PBFD has distinct features and in most circumstances a diagnosis can sometimes be achieved by veterinary examination alone but testing is always recommended for confirmation. PBFD generally affects young psittacine birds. However, birds of all ages can succumb to the disease.

Chronic PBFD is insidious in its development and progression; dystrophic feathers replace normal ones as they are moulted. In this manner, a PBFD – affected bird can gradually lose its plumage without other signs of illness.

Destruction of powder-down feathers creates bare skin, and the decreased production of powder causes the plumage to become dirty and dull and the beak to become glossy.

The pattern of feather abnormality which develops is related to the stage of moult that the bird is in when the disease first begins and is usually slowly progressive. Abnormal feathers are usually short and have one or more of the following characteristics; fault lines; a thickened or constricted feather sheath; clotted blood attached to the formed feather quill.

In *Neophema* spp., apparently normal feathers which fall out or are effortlessly plucked, may be the only clinical sign. The first clinical sign in birds with green plumage (such as Princess parrots and lorikeets) may be the development of yellow feathers which otherwise appear normal. This is probably the result of microscopic changes in the feather structures.

Secondary disease problems commonly exist. These include bacterial, fungal and viral infections. Most birds with chronic disease eventually have difficulty eating, lose weight and die.

Acutely affected birds often have mucoid or green diarrhea. These signs are often clinically diagnosed as secondary bacterial or chlamydial infections. However, the virus can cause acute hepatitis, particularly in cockatoos. Some birds may die of acute hepatitis without obvious feather lesions.

## Diagnosis

Severe on-going PBFD is not difficult to diagnose. The difficult cases to diagnose are those birds (and species) only showing subtle signs either because of their age or immunity.

Histological examination of feather follicles has been routinely used to confirm clinical disease but it is not suitable for diagnosing incubating infections.

Psittacine circovirus can be detected in affected feathers by haemagglutination assay (HA) and HI antibodies can be detected in blood, serum, plasma or yolk. PCR testing for the presence of the virus can be performed on blood and feather samples.

## Prognosis

Spontaneous recovery from Pbfd can occur in many species, including budgerigars, lorikeets and lovebirds. Although it is unknown whether some of these birds will continue to carry and potentially shed the virus to others in their feather dust and faeces. Some acutely affected birds also recover. However, the majority of chronically affected birds do not recover from the disease.