

Circovirus Infection in Pigeons

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Species

Circoviruses are a newly recognized group of viruses that can infect quite a range of different bird species. Perhaps the most important of these viruses are the Psittacine Beak and feather disease virus that causes serious feather abnormalities in several species of the parrot family and the circovirus of pigeons. This fact sheet will only deal with the circovirus that affects feral, wild and aviary pigeons and doves.

Status in Canada

Circovirus in pigeons was first recognized in 1993 and in Canada in 1999. It has also been reported in Europe, North America and Australia and likely has a world-wide distribution. Examination of archived tissue in diagnostic laboratories confirms the disease has been around but not recognized for a much longer period. The disease is very common in Canada but not often recognized because it causes subtle damage to the lymphoid system resulting in immunosuppression and rarely causes overt mortality. A circovirus of Senegal doves has been identified but it is not yet certain if this is the same virus as the one affecting pigeons.

Etiology

Circoviruses are very tiny viruses. Infected birds shed viruses in feces, crop secretions, and in feathers. The virus is very stable and resistant to chemical inactivation and environmental degradation making it difficult to eradicate from an infected loft.





The Disease

Pigeon circovirus infection may be clinically silent in a loft and go unnoticed or it may present as mortality outbreaks of varying magnitude in unweaned squab. Mortality may be high in young birds. Affected squab may grow slowly, develop diarrhea or respiratory signs and are more susceptible to a variety of other disease conditions. The virus targets and damages lymphoid tissue so that infected squab are more susceptible to viral, bacterial, and fungal pathogens. Viral immunosuppression is perhaps the most important consequence of circovirus infection and the severity and type of clinical signs, mortality, and lesions often depend more on the secondary pathogens infecting the sick birds. Feather abnormalities, the hallmark of circovirus infections in parrots, occur occasionally but are uncommon in pigeons.

A diagnosis is made based on observing typical microscopic changes in tissues particularly lymphoid tissue (Bursa of Fabricius and spleen), and identification of virus by culturing infected tissues or molecular techniques like PCR.

Horizontal transmission via the fecal oral route or via crop milk is likely and there is circumstantial evidence to suggest that vertical transmission also occurs. Racing events and intermingling of commercial pigeons with feral birds may well promote dissemination of the virus to naïve lofts or feral pigeon populations.

Treatment and Control

There is no practical treatment for circovirus infection. There is good evidence that many infected birds recover and become immune. Pigeon flocks may have been infected for many years without the owners knowing the virus was circulating in the loft .. the only clues being increased mortality and perhaps unthriftiness of the squab. At the present time there is no test

available to identify infection in live birds and assess the disease status of a pigeon loft although there have been promising results using certain molecular techniques on blood from live birds.

Good husbandry, good sanitation and a reduction of stress during the squab rearing period will help reduce mortality and decrease the potential of secondary infections affecting the immunosuppressed young birds.



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