Avian Polyoma Virus

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(Based on information from the Ottawa Psittacine, May 1996 (the newsletter of the Ottawa Parrot clubs), Dr. Michael Taylor from the Ontario Veterinary Teaching Hospital and an article written by a Budgerigar and Foreign Bird Society of Canada member.)

Most bird owners are unaware of the devastating impact this viral infection can have or the simple precautions that can be taken to prevent an outbreak. The birds that we need to worry about most with this disease are young Psittacines between 2 weeks and 5 months of age. Birds that are infected during this time will die, most commonly at weaning. If infected later they will not show any signs, but may become carriers. Carriers are dangerous because they don't look sick, are difficult to test for unless they are shedding the virus at the time, but may shed the virus when there are babies around and hence kill them.

A bird infected with Polyoma virus can show no symptoms, appear completely healthy in all respects and may not shed the virus until placed in a situation involving stress. (Such stresses may include bleeding, undersized cages, being placed in too close proximity to birds of different species, etc.)

What is Avian Polyoma Virus?

Avian Polyoma Virus (APV) was first discovered in 1981 in budgies and was called Budgerigar Fledgling disease. It is a virus in the Polyoma family a group of very small, unencapsulated viruses. (Viruses are small infectious proteins, which need living cells to reproduce.)

What species does it attack?

Fortunately, Polyoma Virus does not effect humans, however, it is devastating to bird populations and appears to threaten a wide variety of birds including: Macaws, Amazons, Conures, White Billed Caiques, Parrotlets, African Greys, Lovebirds, Ring Necked Parakeets, Eclectus, Scarlet Chested Parrots' Bourke's Parrots, Cockatoos, Cockatiels, Budgerigars and Finches.

What does it do and what are the symptoms?

APV targets just about every system, and can be seen in many of the organ systems. As the vital organs fail, the body is unable to process food, crop stasis occurs and the bird dies from dehydration even though the crop is full. Sometimes subcutaneous hemorrhaging (bleeding under the skin) occurs and other infections may have set in. Adults may experience weight loss, recurrent bacterial and fungal infections and poor feather formation. They may appear to recover but die months later from renal failure.

If birds infected with APV are bred, nesting and laying can appear normal. Chicks sometimes die in the shell or hatch in a very week state only to die within hours. Other chicks may hatch

just fine and appear to be thriving for as long as 15 days, however, due to a weakening of the vital organs and the immune system, the body cannot support its own growth and the chicks die acutely, within hours with full crops. As the vital organs fail the body is unable to process food, crop stasis occurs and the chick dies of dehydration although the crop is full.

Some chicks live longer but fail to thrive. They may have poor muscle tone, swollen abdomens, be unable to fly and never learn to feed themselves. Still others may seem completely normal, other than being slow to grow and feather out. These chicks learn to fly and eat on their own and appear completely normal, but they may be carriers of the virus and go on to infect others and their offspring.

How do birds get APV?

Affected birds may shed the virus intermittently. Parents may infect offspring through vertical transmission into the egg before laying, regurgitation of food, via exfoliated crop cells. Fostered eggs and chicks can pass the virus on to new parents. The virus can be shed in feather dust and transmitted though breathing the air near an infected pair. Studies suggest that the virus could be shed from all bodily functions, reproductive, gastrointestinal and renal functions, so the virus may appear in feces, urine, eggs and sperm. The virus may also be exhaled and in turn inhaled by others.

People who care for birds may inadvertently transmit the virus through their own breathing actions, as well as by contact with the dust on clothing and debris on shoes.

What is the cure?

There is no known cure but a vaccine is available, not readily, in Canada and it can be costly. Baby birds can be vaccinated at 5 weeks of age with a booster 2 to 3 weeks later. If there is an outbreak in your aviary all birds should be vaccinated annually to help them protect against the virus and to decrease the concentration of the virus in the environment.

What can we do to prevent it?

For the health of the rest of our flock, all new birds, no matter what the source, should be quarantined and vet checked before introduction to your own collection. There are several schools of thought as to how long the quarantine should last. Recommendations range from 30 to 90 days. **Ask your vet and follow his/her recommendation.**

Nursery management is a very important factor, how babies are fed, using the same tools for handfeeding instead of fresh ones for each clutch, not mixing species together, keeping species separate.

When you are visiting another aviary, follow a set of rules. Change clothes before and after the visit so that you do not inadvertently bring something in on your clothing or shoes. Do not handle the birds unless you are invited to and disinfect your hands before and after.

The source of an infection of APV into an aviary is almost impossible to identify. Birds taken on visits or to public displays can contract the virus simply be being close to an infected bird or it's caregiver. Virus particles can also be passed on in dust on books or other aviary equipment moved from an infected aviary to an unaffected one it can be spread from second-

hand cages, nest boxes, used seed cups, etc., which are not thoroughly cleaned and disinfected before coming into a home or aviary with birds.

APV can rapidly spread once established in an aviary. Particles can evaporate into the air from feces as they dry, can spread through air flow, disturbance of even the smallest amount of dust and physical contact of caregivers.

APV particles are very resistant in the environment. The can survive in extreme heat and can contaminate an environment for an extended period of time. There is no information as to just how long. Polyoma is also very resistant to many disinfectants, however, chlorine bleach is thought to be effective, as well as sodium hypochlorite.

Closed aviaries are encouraged for people who wish to breed birds, in order to avoid infections. Any new birds entering the aviary should be tested for Polyoma and other diseases while in quarantine, and no visitors should be permitted into the aviary. A bird, which is shedding APV, can be kept as a pet, but only in a situation where it does not expose other birds, particularly neonates, to the virus. Veterinarians do not recommend keeping infected birds as pets in a home or aviary where breeding is taking place, even if they are in a separate room and if a bird is identified as having APV.

Any chicks that die in the nest for no apparent reason should be taken, within 24 hours or sooner, to an avian pathologist for necropsy. Fresh samples are necessary to identify the virus. Live birds can be tested for APV by an avian veterinarian, however, the testing is not cheap as samples must be sent to the U. S. A. for analysis. The best defense is prevention. Education about this infection is the first line of defense in protecting our feathered friends.

In closing, Polyoma is out there, yes, it can have devastating effects but it can also be managed. We can all start by examining our own practices and following the hygiene guidelines so many people believe are only for those "big bird owners". We can cut down the incidence of this virus by how we manage our own aviaries.