

Veterinary Viewpoints

compiled by Amy Worell, D.V.M.
Woodland Hills, California

Question: I would like to know more about Pacheco's Disease. In particular, how is it spread, how long does it remain dormant in the bird, and which birds are susceptible?

K. Losletter, New Mexico

Answer: Pacheco's Disease, named after the Brazilian veterinarian who discovered it, is also called Parrot Herpes Virus. During the worldwide epidemics of psittacosis (parrot fever) in the 1920s and 1930s, it was observed that some birds were dying suddenly without the symptoms attributed to psittacosis. Dr. Pacheco observed that some birds died very suddenly without any clinical signs, other affected birds failed rapidly and died within a few days. The liver and spleen appeared to be the primary target organs, often undergoing massive tissue death. No treatments were effective in treating affected birds.

The causative agent was discovered — an intracellular virus of the herpes group. This virus can remain dormant in affected birds for long periods of time, suddenly appearing as clinical disease after stress such as shipping or mixing populations of birds. It appears that the virus, dormant in the liver, is shed in the droppings and spread to other susceptible birds. As a complication, it has been found that some species can be asymptomatic carriers, that is, they carry the virus for indefinite periods of time, shed the virus in their droppings intermittently, but never develop clinical illness themselves. The two notable examples of this carrier state are the Nanday Conure and the Patagonian Conure. With the exception of the conures already mentioned, most psittacines are susceptible to Pacheco's Disease. Until quite recently, curators of large avian collections did not allow or keep conures with their general collections.

There are no diagnostic tests currently available to diagnose Pacheco's Disease in a live bird. Sentinel birds, i.e. a susceptible species, have been placed in an aviary with conures to monitor for carriers. The death of the sentinel birds with lesions of the disease would confirm its presence within the aviary. The most recent

medical advancement, a vaccine, is now commercially available through licensed veterinarians. Initial inoculation requires two doses of vaccine administered by injection two to four weeks apart. A yearly booster vaccination is recommended and advisable. I would strongly recommend this vaccine for all susceptible birds. This would include all psittacines with any risk of exposure. Birds in mixed collections and breeding programs as well as any companion birds that might be boarded or taken to a pet shop or other facility for service or care must be considered at risk. With this new vaccine, it is inexcusable for any bird to die from Pacheco's Disease.

James M. Harris, DVM
Oakland, California

Answer: Pacheco's Disease is a viral disease caused by a herpes virus, affecting all species of psittacine birds. The disease is spread through food contamination and inhalation of fecal and respiratory secretions.

Most birds will become sick after a short incubation period; however, there are asymptomatic carriers which can spread the disease without being clinically affected. Some of the birds that are asymptomatic carriers are conures, notably the Nanday, Patagonian, Maroon Bellied, White Eyed and several other species. These birds can be lifelong carriers. Amazon parrots and macaws are particularly susceptible.

The disease can spread very rapidly through a flock or aviary and losses can approach 100% within just a few days.

There is currently a vaccine that can be used to immunize birds against the disease.

Robert B. Altman, DVM
Franklin Square, New York

Answer: Pacheco's Disease is most accurately described as a herpes virus infection. There is a seasonal incidence of the disease, in that it is most common in the winter months. Once symptoms occur, the disease takes a very rapid course, with a mortality rate of 100%. A carrier state does exist and has been reported to be as

long as two and one-half years. A personal experience involved a Mealy Amazon with no exposure to other birds in over four and one-half years. Following exposure to cold weather, the bird died suddenly within 24 hours. The state diagnostic lab diagnosed Pacheco's Disease.

A number of factors probably influence the carrier state of the disease, most commonly involving some stressful episode. Stressful factors such as poor nutrition and husbandry, shipping, cold weather, exposure to other infections, and many others, could be included in this list. The disease has been reported in most of the major groups of psittacines, including macaws, cockatoos, Amazons, conures, cockatiels, and lovebirds. Certain conures, including the Patagonian, Nanday and Maroon Bellied Conure, appear to show resistance to the disease, but can harbor the virus and infect other psittacines.

Most cases of herpes virus are presented for examination already dead. The occasional bird that is presented with the disease will be very ill, and may show symptoms such as depression, anorexia, a runny nose, and diarrhea. Diagnosis is once again made during the post mortem examination.

Transmission is primarily through direct contact, but indirect contact is also possible. The virus is shed through body secretions, especially the feces.

Quarantining of newly imported parrots and individual caging are recommended as preventative measures. In the face of an outbreak, thorough disinfection of cages and premises is necessary. Some of the worst outbreaks I have seen have involved Half Moon Conures and mini macaws, particularly Severs. Precautions with your birds must always be taken!

Roger Harlin, DVM
Oklahoma City, Oklahoma

Answer: Pacheco's Disease is an extremely devastating herpes virus infection that affects psittacine birds. Most affected birds are not noted to be clinically ill prior to death but, unfortunately, are just found dead in the aviary or cage. If signs of illness are seen prior to death, vague signs of disease such as listlessness and fluffiness may be noted. Occasionally, the urates may be noticed as yellow in coloration instead of the normal white. Most birds are of good body weight and flesh.

Amazons, cockatoos and macaws all appear to be very susceptible to the disease. Certain conures, including the Nanday and Patagonian, appear to carry the disease without becoming infected themselves. Other species of birds, including a Blue and Gold Macaw, a Red Fronted Macaw, a Double Yellow Headed Amazon, and a White Capped Pionus, have all been implicated as the carrier species in different outbreaks. In addition, it appears now that both imported and domestically reared psittacines may be carriers of the virus. These carrier birds harbor the virus in their systems until some stressful incident causes the virus to become reactivated and shed from the bird's body. Stressful events include change in weather, onset of the breeding season, raising of offspring, and movement of birds.

Transmission is through fecal contamination of food and water, direct contact with infected birds, and through fomite or inanimate object contact. Hence, in an outbreak, the carrier bird will remain unaffected and random birds in the aviary may succumb. This is presumed to be due to the movement of people through

the aviary and the inherent fomite transmission that is possible. Unfortunately, there is no reliable test to identify living carrier birds.

In an outbreak, use of the drug Acyclovir has been shown to minimize death losses. In addition, the newly available vaccine for Pacheco's Disease may be used, realizing that vaccinating birds in the face of an outbreak may serve to bring about more clinical cases. Birds that recover from the infection are thought to become immune to subsequent challenges with the virus.

Prevention, then, is the key, in attempting to control Pacheco's virus from entering your collection. Quarantining of all new birds for a *minimum* of 30 days cannot be over-emphasized. Housing conures in separate facilities should also be considered. Vaccination of all psittacine birds is also currently being recommended.

Amy Worell, DVM
Woodland Hills, California

Answer: Your first encounter with Pacheco's Parrot Disease will doubtless leave a lasting impression as no

psittacine disease is quite so devastating as this. Not only is Pacheco's rapidly fatal and highly contagious, but it also affects almost all psittacine species.

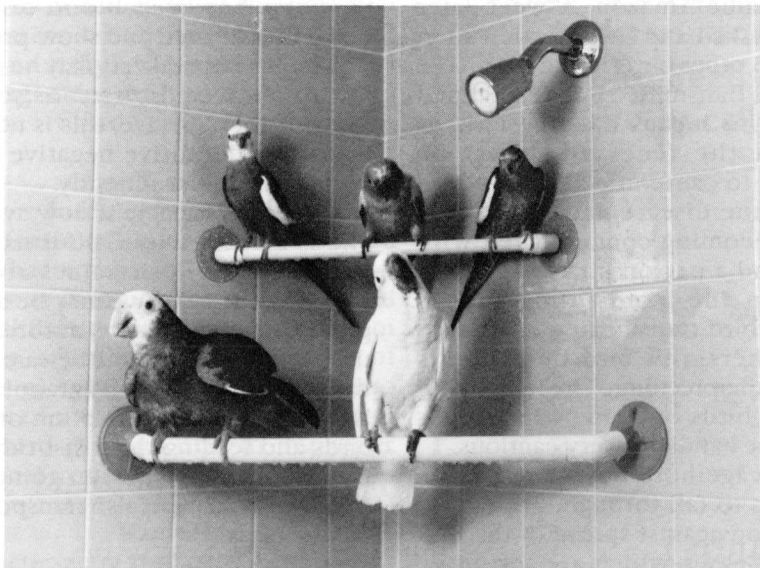
Pacheco's Parrot Disease was described by a Brazilian doctor named Pacheco (of course) in the 1930s, however, he thought it was an aberrant form of psittacosis. Later it was found to be caused by a Herpes virus. In 1975 it was first recognized in the United States and in 1978 an outbreak spread throughout the country. Through the years, many outbreaks have been described and the literature abounds with information but we still have much to learn about this devastating disease.

One of the most important aspects of the disease is the presence of asymptomatic carriers. This is common in herpes virus infections, regardless of species (for example — the common cold sores on the lips of humans which are caused by Herpes Simplex I virus). A carrier bird, like that carrier human, may be very healthy but, during times of stress, the human may get eruptions on the lips, or the bird may begin to shed

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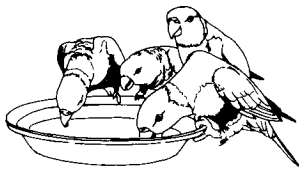


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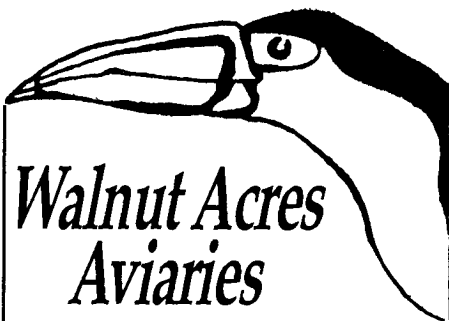
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virus which can infect surrounding birds. The most commonly implicated carriers are Patagonian Conures and Nanday Conures; however, other species have been suspected from time to time. Some conure species are susceptible, suffering high mortality. Amazons and African Greys are highly susceptible, followed by cockatoos, cockatiels, lorries, lovebirds, parakeets and macaws. Some birds will survive, especially conures and macaws.

The first sign of trouble is usually a bird that dies suddenly without previous illness. Affected birds often have diarrhea, in which the fecal and/or urate portions of the stool may be stained yellow indicating liver damage. Some birds may show signs of respiratory disease while others may have seizures prior to death. The disease can spread rapidly through an aviary. The incubation period can be as short as five days but may be much longer.

A presumptive diagnosis can be made on post mortem examination if the liver shows the characteristic yellowish color typical of necrosis (death of the cells). Confirmation requires microscopic examination by a pathologist who can see characteristic inclusion bodies in affected tissues, or by isolation of the virus.

Once the diagnosis is made, or suspected, there are some steps that can be taken to minimize losses. First and foremost, don't handle the birds. The virus is very easily spread on the hands. In fact, this is the second most important type of carrier status. I have known of cases in which the virus was carried into a pet shop by a person who had touched a dead bird, then came into a pet shop and played with a tame Amazon. A week later that bird died and the infection soon spread to other birds in the shop. The disease is transmitted by the fecal-oral route. This means that the virus is shed in the feces and must be ingested to cause infection. If a bird dies of the disease and falls to the floor, becoming contaminated with feces, and a person picks it up, gets virus on the hands and touches another bird transmitting virus onto the feathers, this bird then ingests virus while preening. The temptation to move birds out can be hazardous unless the handler is very cautious.

Wire cage bottoms, which allow the feces to fall through, are a good precaution against spread of this and other diseases which are spread by fecal-oral contamination. If a bird

dies in a flight cage full of birds, the benefit of separation may outweigh the risk of transmission. Disinfection is very important. Almost any disinfectant that is effective against viruses will kill Herpes virus. Not only the cages but all exposed surfaces should be cleaned and disinfected. Don't forget commonly touched objects such as door knobs, refrigerator handles, utensils, faucets, etc.

Food and water bowls should be washed and disinfected daily. Bowls should be positioned in the cages so they are not under perches or otherwise placed so they are easily contaminated. Bird care personnel should dip their hands in a bucket of disinfectant between each cage. Chlorhexadine (Nolvasan, Virosan) is effective and easy on the hands. Chlorhexadine (20 cc per gallon) can also be added to the drinking water to kill virus which may contaminate the water supplies. Sick or exposed birds should be cared for by a different person than the caretaker for healthy birds, or, if not possible, they should be cared for last.

Acyclovir (an antiviral drug) has been reported as useful in treating infected birds. In general, handling the sick birds to provide treatment is very risky as far as contaminating other birds, unless the bird is isolated.

Pacheco's is usually thought to be a disease of imported birds. As aviculturists become more sophisticated and use diagnostic services, cases are being seen in breeding collections which have been closed for a few years. It appears that the initiation of breeding activity may cause viral shedding. There is currently no commercially available test to screen for carriers; however, blood tests are being investigated and show promise. Cockatiels or parakeets may be placed with a suspected carrier as sentinel birds. If they survive, this is not necessarily a definitive negative as the virus is shed intermittently.

A licensed vaccine is now available and is marketed by California Avian Lab. When all psittacines are routinely vaccinated, we may be able to prevent the explosive outbreaks of the past. Until that time beware of the carrier. If you carry Patagonians or Nandays, consider isolation of these birds and feeding them last each day. But, remember, a person going from aviary to aviary can also transport this deadly virus.

Susan Clubb, DVM

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