

Veterinary Viewpoints

Edited by Amy Worell, DVM, ABVP
Woodland Hills, CA

Question #1: Is feather and beak disease still a problem? I haven't heard about it for several years. Is it still a concern? I raise mostly large parrots and my friends and myself have not heard of infected birds for years. What's the scoop?

M. Cohen, California

Answer #1: In my opinion, Dr. Ritchie and his colleagues may deserve a lot of the credit for the reduction in PBF. We had ongoing (but occasional) problems here at our breeding center in Canada, where a large breeding cockatoo population is maintained. When the DNA probe test was introduced, we had our entire cockatoo collection blood tested, and identified two latent or "carrier" birds. These birds were clinically normal and reproducing. They were re-tested and euthanized after the second positive, and we never again saw another chick or young bird die of PBF. Although our colony is now more or less "closed," a new cockatoo would have to be PBF negative before being released from quarantine.

Louise Bauck, DVM
Canada

Answer #2: Yes, PBF (Psittacine Beak and Feather Disease) is still a concern to aviculturists and pet owners. This disease is caused by a virus called "circovirus" which causes generalized immunosuppression in birds infected with the agent. To date, there is no known treatment beyond supportive therapy and the disease is fatal in chronically infected birds.

There is a good description of the characteristics of this disease in *Avian Viruses: Function and Control* by Dr. Branson Ritchie. Much of the work describing this virus was performed by

his group at the University of Georgia College of Veterinary Medicine where ongoing research into the disease continues. Briefly, there are two recognized forms: an acute form that affects mainly juvenile psittacine chicks and a chronic form seen in adults.

Beak and feather abnormalities, which characterize the disease, may or may not be present depending on the form and stage of the disease.

There is a species specific susceptibility pattern with PBF. Clinical disease is most often observed in Austral-Asian species such as cockatoos, Eclectus, greys, lovebirds, etc. Clinical disease in New World species, such as Amazons and macaws is rare but reported. This does not mean that New World species cannot be infected, but they rarely manifest signs of clinical disease. There is a difference.

Not all birds exposed to the virus will demonstrate disease. There are three possible outcomes to each exposure: (1) the bird is exposed and does not become infected; (2) the bird is exposed and does become infected but ultimately "clears" the virus; (3) the bird is exposed, becomes infected, and then develops clinical disease, which is either acute or chronic. The pathway to acute or chronic disease is not well understood but may depend on an individual bird's age and particular immune response to the infection.

Therefore, not all birds, which are infected, will develop disease. Also, it appears that birds develop a resistance to disease (not infection) with age.

This means that the birds may become infected but will clear the virus from their system without manifesting clinical disease. This age of resistance has not been established. However, anecdotally, many avian veterinarians believe that most birds one year of age and older have developed

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resistance to clinical disease. In fact, this age may be younger but more work remains to clarify this idea.

The reason that the disease seems to be declining is improved testing methods. The advent of genetic probe testing has revolutionized the infectious disease field in both human and veterinary medicine. The most commonly employed gene probe method is known as PCR (polymerase chain reaction) testing. The veterinarian may evaluate possibly infected birds by submitting either blood or cloacal swabs for analysis. This test actually probes the samples for presence of the viral DNA and is highly sensitive and specific. Therefore, infected birds, which are not demonstrating clinical disease, may be detected and monitored. If the test returns a negative result, then the bird was not infected at the time of sampling.

If the result was positive, then two possibilities exist: (1) the bird was infected at the time of sampling or (2) the sample was contaminated or lab error occurred. (The test is highly sensitive and care must be taken not to contaminate the sample; lab error is rare).

If the initial test is positive, then a second test should be performed in 90 days to determine if the bird is chronically infected. During this interval, the bird may clear the infection and the result will be negative. However, if two positive results are returned, then

the bird may be chronically infected and may not be able to clear the virus.

Veterinary researcher Dr. Bob Dahlhausen of Research Associates Laboratory, Inc (Milford, Ohio), which is a commercial testing laboratory, reported that the PCR testing rate for PBFDF was down by 18% in 1997 in comparison to previous years. The PBFDF positive results in the years prior to 1997 were 3.5%. However, the rate of PBFDF positive submissions in 1997 had increased to 5%.

Pathologist Dr. Robert Schmidt of Zoo/Exotic Pathology Service (West Sacramento, CA), reported that he was still receiving specimens which were histopathologically diagnosed with PBFDF, although at a lower rate than previous years. He stated that the number of adult submissions had greatly declined but he still was receiving some number of juveniles.

Both Drs. Dahlhausen and Schmidt indicated a high percentage of the submissions positive for PBFDF were juvenile African Grey Parrots.

Therefore, in summary, PBFDF is still present in psittacine aviculture and remains of concern to aviculturist and veterinarians alike.

Darrel Styles, DVM
Dripping Springs, Texas

Answer #3: I rarely see birds affected with feather and beak disease any more. This has been a downward continuing trend for the past five years.

Occasionally, we will see birds clinically affected with the disease, and of these, the majority are lovebirds. Once a clinically affected bird is identified, then the DNA probe test is recommended and performed. This drastic decrease in the number of affected birds most likely is due to a number of variables, including education of the bird owning public about the disease, a good test to identify affected birds, euthanasia of clinically affected and DNA confirmed positive birds, and possibly, even, the end of importation as we knew it, as newly affected individuals entering the United States bird population is greatly diminished.

So, I think that the disease is still lurking out there, but thank goodness the devastation and heartbreak associ-

ated with it has greatly decreased for bird owners everywhere.

Amy B. Worell, DVM, ABVP-Avian
West Hills, CA

Veterinarian Profiles

Louise Bauck, DVM

Dr. Bauck completed a postgraduate degree and residency in exotic pet medicine after completing her DVM at the University of Saskatchewan. She currently works as the Director of Veterinary Services for the Hagen Avicultural Research Institute. Dr. Bauck is on the review board for two international veterinary journals and has authored chapters in all three current major avian texts. She has also written the new AAHA manual on avian medicine, and has authored the avian chapter in the current Merck manual. She is a consultant for the Pet Industry Joint Advisory Council in both the US and Canada. A frequent lecturer to both the pet industry and to the veterinary community, her current research interest is in diseases of the Lady Gouldian Finch.

Darrel K. Styles, DVM

Dr. Styles is a research veterinarian who has worked within the avicultural community for the past 10 years. He earned his DVM at North Carolina State University. His studies have taken him to work with noted research veterinarians and bird collection throughout the country. His work experience includes such facilities as Avicultural Institute and Pet Farm, Inc., as well as the Avian and Exotic Bird Medicine Department at NC State University. He is currently an owner of Hill Country Aviaries in Dripping Springs, Texas. Dr. Styles is also attending classes at the University of Texas where he is working on his Masters Degree in Medicinal Chemistry.

Amy B. Worell, DVM, ABVP-Avian

Dr. Worell has a BS in Zoology from the University of Kentucky and a DVM from Auburn University. She is a diplomat of the American Board of Veterinary Practitioners, where she was among the first group of veterinarians to be certified as an avian specialist. She is the owner of All Pets Medical Centre, in West Hills, California. Dr. Worell is an avid aviculturist, raising cockatoos, pions, Greys and Eclectus Parrots. In the past, Dr. Worell was the AFA State Coordinator Chairman and chairman of the AFA veterinary program.

She served as the Association of Avian Veterinarians Chairperson for both the research and client education committees for several years, as well as being on the board of directors. She is on the editorial staff of several major avian and exotic veterinary publications as well as a contributor to major avian textbooks. She is known internationally for her research on hemochromatosis in toucans. ➤

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