



the by Ralph Cooper, D.V.M. Vets Corner

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PSITTACOSIS, A CONTINUING THREAT

INTRODUCTION

Today I had to tell a young couple that the little Amazon parrot which they had just purchased two weeks ago, at a cost of \$400, had died of psittacosis. As we continued to discuss the ramifications of the disease, the young wife started to recite her sumptoms of the past three days, which very strongly support the probability that she has psittacosis too. At least she and her husband know what the problem is, but they are still faced with the expense and nuisance of a prolonged course of treatment. They may or may not get some adjustment for their financial loss.

Variations on this same theme have been repeated 46 other times in Southern California so far this year and more than 80 times in all of California. Each case is a little different from the others. but each typically involves some hazard to the people who are involved, some death losses of birds, considerable expense and effort during the quarantine period and much disruption of the personal or business life of the individuals. In at least 35 of the 47 cases, the owners knew nothing about psittacosis or only had a very hazy notion of its nature. I see this as a warning to us that we must do a better job of education in the future.

There are at least three proposed solutions for the problem which have been considered seriously by at least some private and official parties. One group would just ignore the problem and hope it would go away. For as long as psittacosis can be transmitted to humans and is able to cause illness and even death, this approach must be discarded as unacceptable. At the other extreme are those few individuals who would solve the problem by eliminating the primary source of the disease, namely birds. As absurd and distasteful as this approach is, it appears that it is actually under consideration and we must not ignore the possibility that at least an attempt might be made to implement it. Between the two extreme positions lies a middle ground where concerned private and professional workers may meet to exchange ideas and work together to reduce the threat of psittacosis to our birds and to ourselves. This is where I find myself and is the point of departure for this presentation.

WHAT IS PSITTACOSIS?

Psittacosis is an infectious disease of birds and humans which is caused by a peculiar kind of bacteria which is known by the name of Chlamydia psittaci. As a disease, it may pass undetected, it may cause mild to severe illness, or it may kill. It all depends on the capability of the particular strain of bacteria to cause disease, balanced against the ability of the infected bird or human to resist the effects of the organism. For example, the strains which commonly infect pigeons and doves is usually mild and only rarely kills an otherwise healthy bird. That same strain rarely affects the owner of the birds, although it may pose a hazard to someone with chronic lung problems such as emphysema. The strains which commonly infect budgerigars rarely kill the birds, but may cause a serious disease in the unwitting buyer of an apparently well carrier bird. It often happens that we uncover an infected breeder flock as a result of the traceback from a human case. Interestingly enough, once the flock is identified and properly treated, the owner usually volunteers the information that they have never looked so well or produced such good babies.

Most other psittacines seem to be highly susceptible and usually will die after a short or long illness. The owner of the infected bird will often become quite ill and will not recover until the specific drug treatment, tetracycline or chlortetracycline, is administered. The untreated disease in humans is only very, very rarely fatal, but it can kill and must be treated with respect.

CLINICAL SIGNS AND SYMPTOMS

In birds, the disease may persist undetected for some time or may manifest itself suddenly. In the case of psittacines, a typical pattern might be the following. The bird is found to have ruffled feathers, it is depressed, it loses its appetite and rapidly loses weight, and it may have diarrhea. Many of you will recognize that this group of symptoms is shared by many diseases and can't serve to identify psittacosis with any degree of certainty.

CLINICAL DIAGNOSIS

It is technically possible to make a definite diagnosis of psittacosis in the living bird by submitting a sample of its droppings to a suitable laboratory for culture and isolation of the organism. The only such laboratory in the western United States is at the George W. Hooper Foundation at the University of California Medical Center in San Francisco. Dr. Julius Schachter, the director of the laboratory and an international authority on psittacosis, is more than capable of performing the isolation attempt, but is limited by logistics, time, personnel, and money. It is Dr. Schachters laboratory which accepts suspect birds from our laboratory and from private veterinarians for isolation attempts when we have not been able to make the diagnosis based on gross lesions.

You may have heard that there is a

blood test for psittacosis. In reality, they can't be depended on to provide much really helpful information on the status of the live bird.

One practical technique, which is utilized by many practicing veterinarians, is to treat the suspect bird with chlortetracycline either by injection, orally, or in the drinking water. Even water treatment may relieve the symptoms of psittacosis and enable the bird to regain its appetite and feeling of well being. Unfortunately, the organism of psittacosis will not be removed from the birds system by water treatment and the bird will relapse when the treatment is stopped. If the veterinarian observes a favorable response to the chlortetracycline treatment, and if the other factors support a diagnosis of psittacosis, he may recommend one of the standard systems of treatment which utilize medicated feed for an extended period of time, from 30 to 45 days.

LABORATORY DIAGNOSIS

Of the 47 cases which were diagnosed in our laboratory so far this year, 39 were confirmed at the time of autopsy. Eight of them required confirmation by Dr. Schachter's laboratory. Confirmation by culture may require as long as four weeks because of the delay in transportating the specimen and the intrinsic nature of the culture technique.

If a psittacine dies of psittacosis, it will usually be found to be thin or emaciated. Upon opening the body cavity, the liver will be seen to be greatly enlarged and probably dark in color and mottled. The spleen may be doubled in size. There may be a thick yellow material on the surfaces of the internal organs and on the air sac membranes. If a smear of the liver, spleen, and air sacs is prepared, stained by one of the recommended stains such as Macchiavellos, and examined microscopically, the typical tiny, round, red bodies are seen which signal the diagnosis of psittacosis. In the absence of conclusive evidence, the veterinarian may decide that it would be most prudent to make a provisional diagnosis of psittacosis and to recommend treatment. He will probably send the body of the bird to whatever laboratory is available for an isolation attempt and confirmation.

TREATMENT

Treatment of birds of the size of cockatiels and smaller, with the exception of lovebirds, is simplified by the availability of a commercial product called Keetlife, produced by the Hartz Mountain Corp. We have learned that most birds such as cockatiels, grass parakeets, budgies, finches, etc. will at least survive for a month on a diet of Keetlife alone. Some birds even seem to thrive and may even raise babies, although it mustn't be ex-

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pected that an infected flock can approach normal productivity during the treatment period.

Lovebirds and the larger psittacines must be fed some mixture of seed or grains prepared as a mash and mixed with a measured amount of SF-66, an especially palatable form of chlortetracycline in a soy bean meal base. This special mixture contains 100 grams of chlortetracycline per pound and is manufactured by the American Cyanamid Co. If it is absolutely unobtainable, a product known as Polyotic may be substituted, although there may be some problem of palatability. It may be advisable to add a small amount of brown sugar to the mash, at least until the birds have become accustomed to it. The basic principle to be followed here is to devise a mash which is palatable, nutritious, and of small particle size in which the drug can be distributed uniformly. Some suitable rations are made of cracked corn alone, boiled into a soft mash. Others are a mixture of chicken scratch and rice. Usually, a suitable mixture can be found in some of the publications of the health departments or can be suggested by your private or public veterinarian. Prolonged treatment may promote the development of a crop mold infection by a yeast which is called Candida. I would recommend that a drug called calcium proportionate should be added to the mash mixture in the amount of about ½ teaspoonful per pound of feed to minimize this problem. If calcium proportionate is unobtainable, copper sulfate should be added to the drinking water two or three times during the course of the treatment. The proper dilution may be prepared in the following manner. Four ounces of powdered copper sulfate is added to a quart of water, preferably distilled. If tap water is used, it may be necessary to add vinegar teaspoonful until the slight cloudiness disappears. This then is the strong stock solution and will remain usable for many days in glass or plastic containers. At no time should it be permitted to be in contact with metal. To prepare the drinking water solution, one tablespoonful of the stock solution should be added to one gallon of tap water. This should be used as the sole source of drinking water for a period of five days. The provision of optimum amounts of vitamin A in the diet is especially important during the quarantine period and one of the commercially available multi-vitamin preparations should be used according to the directions.

PSITTACOSIS IN HUMANS

It must be remembered that humans

are susceptible to infection and that the disease may be fatal, if only rarely. There have been 20 cases so far this year in California as compared with 24 in 1975 and 14 in 1976. Death due to psittacosis is very, very, rare in humans, but it can occur and the disease deserves to be treated with respect. To quote the description of the disease in humans, as outlined by the California Department of Public Health in their publication Communicable Diseases in California, "An acute generalized infectious disease with fever. headache and early pneumonic involvement; cough is initially absent or nonproductive; sputum mucopurulent, not copious; anorexia extreme; commonly constipation; pulse usually slow in relation to temperature; lethargy; occasional relapses. Human infection may be severe but is usually mild in character. Death is rare." Diagnosis may be made by your physician who will prescribe a full course of tetracycline (1 gm./day x 21 days) so as to prevent relapse.

THE FUTURE

In California, the Department of Public Health is working with the Department of Agriculture and private veterinarians to minimize the threat of psittacosis to you and to your birds.

In the course of a recent conservation, Dr. Edmond Bayer, of the Veterinary Public Health Unit, California Department of Health, made the following personal recommendations.

- 1. The threat of psittacosis could be greatly reduced if a system of permanent identification was adopted. It might be leg bands, tattooing, or some combination of methods.
- 2. There should be a routine monitoring of drug levels in the birds during the quarantine period so as to insure that the treatment is effective.
- 3. The quarantine period should be extended to 45 days on the larger psittacines to insure that all birds are clean.
- 4. It might be appropriate to devote some time and money to the improvement of medicated feeds. The production of nutritionally adequate and palatable medicated pellets might be of real value.
- 5. Inasmuch as the problem of psittacosis is increased by the prevalence of smuggling, the levying of more severe penalties on convicted smugglers should be encouraged.

Dr. Bayer and I are in agreement as to the essential values of these proposals, although I speak only for myself and don't necessarily reflect the opinions of the California Department of Food and Agriculture in this matter.

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PSITTACOSIS contd. from page 10

At the moment however, it still remains for you to protect your family and your birds by applying commonsense principles.

- 1. Only buy birds which are known to be free of psittacosis, as well as other diseases, if at all possible.
- 2. Never introduce a new bird into your flock until after it has survived a 30 day quarantine period under your own direct control. It may be prudent to medicate some birds for psittacosis during this period.
- 3. Seek an early diagnosis for the cause of any suspicious deaths or illness among the birds in your flock.
- 4. If psittacosis is found in your flock, follow the official recommendations regarding medication and disinfection, to the letter.

I would like to conclude the discussion with this final observation. There should be no stigma attached to the collector or dealer whom you hear has had the disease. At least he is conscientious

enough to seek the answer to his disease problems.

If he medicates the flock properly and cleans and disinfects the premises rigorously, it would probably be safer to buy from him than from an unknown party. In fact, his may be one of the few flocks which is totally free of the disease.

Recommended Reading

Petrak, Margaret L., Diseases of Cage and Aviary Birds. Philadelphia, Lea and Febiger, 1969.

Hofstad, M.S., Diseases of Poultry, Ames, Iowa, The Iowa State University Press, 1972.

Schrag, L., *Healthy Pigeons*, Obersteinhausen 66, West Germany, Verlag L. Schober Hengersberg 1974.

Davis, John W., Infectious and Parasitic Diseases of Wild Birds, Ames, Iowa, The Iowa State University Press 1971.

Cooper, R., Proceedings of the Psittacosis Roundtable, San Gabriel, CA. 1976. Copies of these proceedings may be obtained at \$6.00 per copy as long as the supply lasts.

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