オウム病を知る－鳥と安心して暮らすために－

What is ‘Psittacosis’? – Worry-free Living with Companion Birds -

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Hello, I am Hideto Fukushi of Gifu University.

So far today we have been hearing about mammals. However I would now like to talk to you about a disease called ‘psittacosis’, or ‘parrot disease’, which infects many kinds of birds.

Earlier on, we heard that, as a matter of historical fact, people have been keeping dogs for somewhere between 10,000 and 20,000 years, and cats for about 12,000 years. Both of these animals have been human companions for a very long time. We don’t know with any degree of accuracy how long people have been keeping birds, and I will be talking a bit more about this later on. Moving on to parrots and true parrots, when we see them in a zoo some of them are kept roosting alone while others are kept several to a cage. However, in the wild these birds live in groups.

Actually, parrots are extremely intelligent birds. Capable of speech and extremely active psychologically, they tend to live very well in groups. When people come along and abduct them from the wild and then keep them alone, I would like you all to understand what this means to the birds themselves. In situations where they are kept alone, the most important things for these birds are their owners. The birds seek their own psychological security through interaction with their owners, so it is very important for owners to take care of their birds in a responsible manner until the end of their lives.

In order to realize this, it is essential to maintain the birds’ health, and for this reason it is important to be aware of what kinds of diseases affect these birds. I will talk about this subject now.

First of all, the only zoonotic disease that people can catch from birds is psittacosis, and so I am going to talk about birds and this one particular zoonosis. Later, I would like to sum up the current situation regarding psittacosis, which is the main subject of today’s talk, including introducing a simple method of curing this disease.

But before that, let’s look at the broader subject of birds and people. This is an international conference, but I hope you’ll forgive me if I talk about Japanese history in the Heian, Kamakura and Muromachi periods. Speaking of the Heian Period, the historical drama series “Taira no Kiyomori” is currently running on TV. Within this drama we see both dogs and cats appearing, but what about birds? During that time period, many people probably enjoyed the beauty of birdsong. Indeed we have ancient ‘waka’ poems that speak of birdsong. So from this evidence we do know that Japanese people have associated with birds since ancient times.

During the Edo Period we know that people admired the brilliance of the plumage of birds such as white-eyes and enjoyed hand-training java sparrows.

In the Meiji and Taisho Eras, birds from many countries around the world were brought into Japan. Some were capable of talking or singing, such as the various species of parrot including the cockatiel, the rosy-faced lovebird, the African gray parrot, etc.

The Meiji Era was also the active period of the novelist Natsume Soseki, who wrote an essay about his pet Java

sparrow. He complained in that essay that he wanted to keep a Java sparrow, so he sent his houseboy out to buy a birdcage, but the boy took a long time to make the purchase. It seems that finch species such as the Java sparrow were well appreciated in old times, but these days a lot of people prefer to keep parrots or true parrots.

People often start by keeping something like a budgerigar. Budgerigars are extremely cute, but they are rather small and childish. When people want something they can interact with a bit more deeply, they may go in for a cockatiel. Cockatiels live for several decades and they can speak well. But if people still become less and less satisfied as time goes by, they may opt for a large parrot or true parrot species.

Looking at the data from the ministry of the Environment on pet bird sales, Japanese domestic production is about 84,500 individual birds, while another 115,000 individuals are imported, making a total of about 199,000 birds.

As I remember, back when I was a child attending elementary school, there was a shop selling small birds in our neighborhood. My father happened to be a teacher at this elementary school, and at the school we kept Bengalese finches as well as canaries. But people's familiarity with birds has changed so much that today's children probably have no idea whether canaries sing or what they sound like.

As you can see, the number of individual birds sold has declined, but in the case of many species, the seilling price for an individual bird has become very expensive.

Moving on to the subject of zoonotic diseases that can be transmitted between birds and people, today I would like to talk about psittacosis, a zoonosis that is hosted and spread by various species of birds. There is a disease spread by wild birds called 'West Nile fever' which has now become infamous. And then we absolutely cannot ignore avian influenza now that concern about 'bird flu' is extremely high. Last year, I received a sudden phone call on the subject from a junior high school student.

The students at the school were sketching a bantam in art class, and the call was to request me to certify that this bantam was not infected with avian influenza. So I performed an antibody test and a fecal PCR test and certified that the tests were negative. I'm sure the children all did their very best in drawing the bantam.

Apart from these viral infections, there are bacterial infections such as tuberculosis and salmonellosis. I have made a table showing these infections. For example, salmonellosis, which I mentioned earlier, is quite commonly found in reptiles I believe. Actually birds can also become sick from salmonella infections. The bacteria can also be present in bird feces, which can be a problem. And of course, there is psittacosis, which I will talk about in more detail later. Also, as was mentioned before, in many cases infected animals don't exhibit symptoms, but when people are infected it can be a serious problem.

Earlier I mentioned bird tuberculosis. In humans, this disease is usually caused by a mycobacterium called Mycobacterium tuberculosis. However, there are also atypical tuberculosis bacteria so it is necessary to take care. There are also many types of ectoparasites, which can cause problems if people come into contact with them.

In addition, although it is not shown here, some people also have allergies to birds, which are not the same as infections. I am sure some of you have allergies to dog or cat hair. In the same way, some people are allergic to the hair or shed skin of birds so if they come into contact with these things they may develop a sudden anaphylaxis, which can be life threatening.

Now, I think it is time to talk a little about my main subject today, psittacosis, or parrot fever. Psittacosis is actually an old disease. By the end of the 19th century a Swiss surgeon had already described a disease thought to be psittacosis. After that, in the early years of the 20th century, there was a major boom in parrots and true parrots within Europe. A succession of extremely

beautiful species was imported from Australia and owning such a bird became a fashionable pastime. Trends of one kind or another appear at any age in history. But as a result of the popularization of parrots and true parrots, there were many cases of psittacosis infection, and this created the momentum for a sudden advance in research into the disease.

In the case of Japan, during the 1930s and 40s, there were cases of people becoming infected from true parrots they had purchased while traveling abroad. But the first case of a psittacosis infection in Japan was not reported until 1957.

As I have drawn in the picture below, psittacosis is an infectious disease caused by a bacterial species called Chlamydophila psittaci, which is present in bird droppings. Usually the infection is not apparent in birds or, in other words, they host and excrete the bacteria without exhibiting any symptoms of the disease themselves. Also, as Imaoka-sensei reported, infected birds excrete the bacteria intermittently and not continuously. But because birds excrete the bacteria from time to time, it can be transferred from parent birds to their offspring, and also to people who breathe in the dust of dried bird feces. People tend to risk this mostly when cleaning birdcages, etc.

The ratio of psittacosis infections is comparatively high among women in their 30s and 40s, but this seems to be a reflection of the fact that women in this age group are more likely to be taking care of pet birds. While children and fathers often want to purchase and keep these birds, at the end of the day, looking after them tends to become part of the housework performed by mothers, so they have an increased chance of becoming infected.

The problem here is that bird droppings start off wet but, as time passes, they dry out and eventually crumble into dust. During this time, any C. psittaci bacteria present in the droppings remain viable, which means that they have the potential to cause an infection. So if a person breathes in this dust, it is possible that they will develop an infection.

If an infection becomes established, the early symptoms are similar to those of influenza, but even if the sufferer is treated for influenza, they will probably be treated with a macrolide antibiotic, which is effective against C. psittaci, and so they will recover properly. Unfortunately, however, if β -Lactam antibiotics such as penicillin derivatives are used, the treatment will have no effect and the infection will worsen which can lead to serious problems.

Up until the 1970s, there were many instances in which people were unable to obtain proper treatment and went on to develop systemic infection, which was fatal in some cases. The reports from that time include a number of case examples. Earlier in the workshop, the subject of skinship came up and in these reports there is one example concerning skinship. Two particular bird lovers were fond of talking about birds with each other. I don't think there were any bird cafés in the 1970s, but one of the bird lovers agreed to take care of the other's bird while that person was away traveling. Then, when that bird became sick, the first bird lover slept close to the bird. As a result the bird lover became sick with psittacosis and eventually died of the disease.

Bearing that example in mind, I would urge bird owners to maintain an appropriate distance from their birds. Now let us look at what kind of microorganism C. psittaci is, which is the cause of this disease. This photograph was taken through an electron microscope. I borrowed it from Professor Matsumoto who taught me about Chlamydophila. Here you can see some small particles inside a large cell. These are Chlamydophila psittaci.

If you only see this photograph it is difficult to realize the size, so I will show you some other things alongside to allow you to compare the size. Some things we have been talking about, for example, gram-negative bacteria, are here on the left side. Actually, the objects listed on the left are all seen through an optical microscope.

'Gambian trypanosomiasis' is a form of chronic sleeping sickness, which is transmitted to humans in Africa by the tsetse fly. This is the amoeba that causes amebic

dysentery, this is Borrelia, and this is Treponema. And here is the anthrax bacillus. This is E. coli, and this here is Staphylococcus, which was introduced earlier.

When the images of the smallest objects on the right side are expanded, we can see the smallest details can be made out through an optical microscope. C. psittaci is here. Here is Vaccinia, which is a little smaller than C. psittaci. Vaccinia is the virus that was used to eradicate smallpox. Last year was a fantastic year in which the cattle disease known as 'rinderpest' became the second disease ever to be eradicated. Like smallpox, it was eliminated by means of a vaccine and an eradication plan. These influenza viruses measure about 100 to 200 nanometers in length, roughly two-thirds of the length of a C. psittaci bacterium. So it is a very small virus.

Next, this is the human papillomavirus and the poliomyelitis virus. The group on the right side consists of extremely small microorganisms that are best viewed through an electron microscope that uses a beam of electrons rather than ordinary light. A little different to the other pathogens introduced so far, C. psittaci can't be propagated in an artificial medium such as agar. It requires something called a cultivated cell. So, from the standpoint of living matter, it is very close to being a virus. This very small particle goes into cells where it replicates, and when it does so it takes two forms. One is an elementary body, rather like a spore, which is indicated in red. This is very tiny, but it is extremely resistant to external environmental conditions. For example, it can survive for about one month at low temperatures.

When in the elementary body form, C. psittaci does not replicate, so unless people breathe in these elementary bodies, there is no problem. But on the other hand, if elementary bodies infect a person, even if an antibiotic is administered, it will not be effective. Most antibiotics take effect at the time of cell division so they only affect the C. psittaci in reticulate body form, which is indicated in green. This is the form in which C. psittaci undergoes cell division. At this time the bacteria's metabolism becomes extremely active and it multiplies by binary fission. Antibiotics take effect for the first time at this point.

Accordingly, since antibiotics do not take effect unless they enter cells, you can understand that the most effective antibiotics are those that feature high transitivity inside cells. For this reason the number of usable antibiotics is limited.

Actually, the zoonitic infections caused by Chlamydophila bacteria are not limited to psittacosis. Around the world, between 20 and 30 cases of conjunctive inflammation caused by Chlamydophila from cats have been reported. Also, Chlamydophila can cause miscarriages. In a case that occurred in France, Chlamydophila abortus was isolated from a pregnant woman who miscarried while on a sheep farm where sheep had also miscarried, so the case was suspected of being a zoonitic infection. Pigs also carry Chlamydophila bacteria and this is considered to have a possible relation to zoonotic infections.

Incidentally, koalas also carry Chlamydophila. This is a major problem for koalas because when they are infected they become blind. They are also unable to breed because Chlamydophila affects the urinary and genital organs. Once after I attended a conference on Chlamydophila in Europe, sitting in the airplane on the way back to Japan, an elderly lady sitting next to me asked me "what is your work?" I answered, "I am researching about Chlamydophila." So she said to me, "that is an important disease for koalas too, so please work hard on your research." In fact, since koalas live in trees if they lose their sight they find it impossible to move from tree to tree. They then become unable to eat which is a very serious problem.

These bacteria are called Chlamydophila pecorum and they usually live in cattle and sheep. It is not clear how or whether these bacteria are involved in disease so investigating their role has become a task for researchers.

I will talk now about Chlamydophila infections in birds.

These birds are 'galahs' and, in their natural state, they live pleasantly in groups such as this. I think it is wrong to catch such birds and abduct them from the wild. But I suppose it is only natural that so many people want to keep them once they see how cute they look. In a book I translated there is a sentence that reads, "Please think about how many birds have disappeared from the natural world so that you can keep one bird."

Chlamydophila bacteria have been identified as being carried by 145 species of birds comprising 18 orders. The causative agent of psittacosis is C. psittaci, but birds also carry C. abortus. And although this has yet to be publically announced, a survey of birds in Ghana found that they were carrying C. abortus and not C. psittaci, and there may be some other varieties out there in the natural world.

These bacteria can be found in all kinds of birds around the world. As I mentioned earlier, the year before last I had a chance to visit Ghana where I found Chlamydophila present in their wild birds. This means that it has spread worldwide. In almost all cases, such infections are subclinical. However, if symptoms do appear the infected animals lose their vitality and become unable to eat food. In the case of birds the feathers tend to stand erect. The animals become progressively thinner and eventually sustain liver damage.

However, in the case of birds, even when they do become thin they do not look so different because of all the feathers they have.

The pathogenic factors include stress. For example, if the owner of a bird suddenly brings home a different bird and the owner focuses their attention too much on the new bird, the first bird may worry about "what will happen to me?" which may lead it to develop symptoms.

This bird has a downcast attitude and also has diarrhea. Take a good look and you will see it appears scruffy. When I made a presentation overseas and used the case of this bird, I described it as being melancholy. Somebody asked me, "For a diagnosis of melancholy, the patient must tell the doctor that they don't feel well. How can you know a bird is feeling melancholy?" So I simply answered, "I'm a vet, so I know" At which everybody laughed. I'm sure that if you keep a bird, you will know if it has respiratory symptoms, etc. However, symptoms do differ depending on the kind of bird. In Amazon parrots, scarlet macaws, etc., nervous symptoms tend to appear.

Next, of the birds that display symptoms of conjunctivitis, cockatiels and budgerigars are perhaps the ones we are most familiar with. However, some other types of birds have comparatively low resistance, such as pigeons. I will talk a bit about pigeons towards the end, but at present, Chlamydophila infections have been largely cleaned up among captive birds. But among wild birds, which nobody can take care of, they have become a major problem.

In humans, the incubation period for psittacosis is between one to two weeks. Okabe-sensei talked about this earlier. Large-scale outbreaks of psittacosis have occurred in bird rearing facilities in some prefectures around Japan. When we checked the amount of time from the day that people were exposed to the pathogen until pathogenesis, amazingly it matched the theoretical incubation period closely. This has been announced in a paper, which I recommend you to read.

In one zoo there was a case in which psittacosis was suspected but it was later established that this was not the case because the incubation time did not match. In preparing to attend this conference I discovered several things. There was a Q&A concerning psittacosis, which included the question, "I bought a bird yesterday and today I have a fever. Could this be psittacosis?" And the answer was, "From the psittacosis incubation period, this is impossible." I was glad to see this Q&A. And I think it is very good that people connect birds with psittacosis.

When a person develops psittacosis, the first symptoms to appear are fever and cough. Then the respiratory tract is affected and, without prompt treatment,

the patient will eventually develop meningitis. The frequency with which community-acquired pneumonia develops is not as high. But in the case that atypical pneumonia, or where the origin is unknown, psittacosis should be included as a possible factor in the differentiation.

Actually, in the case of the large-scale outbreak I spoke about earlier, one of the patients infected at a zoo was diagnosed in Osaka. The zoo itself was in Shimane, which is quite a long way from Osaka. When people become infected in places where animals are exhibited, the problem is that they take their infection home with them. So patients can be scattered across the nation. And once that happens, unless there is horizontal cooperation, it is very hard to establish that a large-scale outbreak has occurred.

I have a long-time acquaintance named Dr. Kishimoto. After he gave a lecture about psittacosis, a medical doctor visited him and consulted him on a case. "I have a patient with a fever that remains persistently high and doesn't return to normal. I questioned the patient in detail and learned that he had visited a certain animal place. What do you think?" I heard that following the consultation the doctor changed the drug he was administering and that the patient's fever subsided at once.

As for transmission of the disease in and through birds, because psittacosis is a subclinical infection in birds they excrete the pathogen without exhibiting any symptoms. When people breathe in particles of excrement from infected birds they can develop influenza-like symptoms. In severe cases, psittacosis can be fatal in humans. However, since the 1980s the number of deaths in Japan due to this disease has probably been zero. This is because doctors of respiratory tract medicine have made a very conscious effort to educate their profession. So in most cases doctors can make a proper diagnosis, which has eliminated deaths due to this infection.

Of the diseases classified under the Infectious Diseases Law, at present psittacosis ranks as the fourth most widely reported disease. Mass outbreaks of the disease were reported in both 2001 and 2002. At that time there were a huge number of cases. But ever since the Ministry of Health, Labour and Welfare began to issue instructions on how to prevent the disease, the number of cases has slowed to a trickle. At the moment there are less than 20 cases, and if this trend continues the number of reported cases will be even fewer.

Looking at the sources of infection, we find that the most common sources are - as one might expect - parrots, true parrots and pigeons, as well as, in some cases, birds other than parrots and true parrots where the species are rather hard to identify. At one zoo where an elk was having a miscarriage and required emergency surgery the vet involved failed to wear the usual gloves or mask. In that unavoidable situation the vet became infected. Such cases are unusual but they occasionally occur.

There is no legal requirement to undertake surveys of pet birds for Chlamydophila infection. Our laboratory carries out a variety of health examinations in response to requests from animal hospitals. In performing these examinations our primary purpose is student education. We give training on how to accept samples from outside, examine them, and return the results of the examination. I explain this to outside people, obtain their understanding, and then take sample specimens. The veterinarian in charge of the case should make the final diagnosis. Our examination results are merely reference materials. On the understanding that these examination results can also play a useful role in the eradication of psittacosis, I report them at study conferences such as this one.

This is from 2006, when 668 specimens were obtained, most of which were taken during medical examinations. Since then, we have examined facilities where birds are exhibited and also birds in the wild.

Now, I will try to explain how these examinations are carried out. For obtaining samples, we have the stools and liquid obtained by wiping the rectum. In most situations, to capture a bird and insert a cotton swab

into the anus would be stressful for the bird, so it is better to obtain a fresh stool. I ask people who wish the laboratory to perform an examination to send as fresh a stool as possible because it is not possible to obtain DNA from a hard stool.

From the sample, we extract DNA using a kit, and then we use PCR technology. There are several ways of employing PCR, and at present, as long there are at least several hundred bases, the DNA can be detected. The base sequence can be read to determine which species of Chlamydophila is present. As for the positivity ratio, until 2005 this was averaging approximately 5%. Then it fell steeply, reaching 1.3% in 2006, 2.1% in 2007 and 0.6% in 2008, before rising to 4% in 2009. The average for the four years from 2006 to 2009 was approx. 1.6%, representing a significant decline from the previous period. I believe this was the result of the effects of various daily activities and of heightened awareness among bird sellers.

On a bird type classification, the positivity ratio is high for cockatiels, but this is because the incidence of examinations is extremely high in the case of these birds. For the other types, the results are widely scattered. These days, cockatiels, budgerigars and rosy-faced lovebirds are mostly domestically bred in Japan. On the other hand, the birds listed on this slide are mostly imported. At present, the direct import of wild birds is prohibited so presumably the birds imported are only those species allowed into the country and are captive bred in breeding facilities in the country of export. Even from these birds, Chlamydophila psittaci is detected.

It is possible to identify what strain of C. psittaci these bacteria are. Although there is a standard strain, even in Japan they exhibit considerable genetic variation. There are not only one or two strains in circulation but a variety of genetically distinct types that are often present in the same host.

Up to this point we have only been dealing with captive bred birds so disease control is comparatively easy. All that is needed is to improve the awareness of bird owners and breeders. But unfortunately it is a very difficult carry out disease control for outdoor-living birds. In one example from our own university, a group under Professor Ishiguro carried out research into domestic pigeons in Gifu Prefecture. This side shows the situation in Gifu, and this side shows the nationwide situation. The results of this research indicated that the positivity ratio for C. psittaci in wild pigeons is about 80% in Hokkaido, about 60% in Tokyo, and approximately 23% nationwide. As you can see, these rates are much higher than those found in captive bred birds.

However, the problem is that the monthly-classified positivity ratios are totally different. For example, in September and October, C. psittaci is found in very high ratios among examined pigeons. But in December, April and June, when the same pigeon groups are examined, the bacterium cannot be detected. So the timing of the surveys is the key issue. Also, depending on the bird group, almost all the pigeons test positive, as shown here. There are numerous problems concerning pigeons. They not only carry the pathogen that causes psittacosis but they are also infected by fungal diseases and various other pathogens and harmed by fecal material.

Now, let us look at treatment. These are rainbow lorikeets (Trichoglossus haematodus), which are very beautiful birds. When a large-scale disease outbreak occurs among such birds, how should we treat them? They only drink juice, basically sucking on the juice of mature fruit.

So we have to get them into a situation where they will drink the juice we provide, and we mix the drug into that juice. However, when they are in a group, the more dominant members drink a lot and the bullied lower ranking birds can't drink at all. As a result, some of the birds will receive an excessive dose while others will not receive any drug dose at all. And if those bullied birds are removed from the group the disease occurs again in this leftover group. So it is very difficult to treat birds in groups. Also, birds such as lorikeets are highly intelligent. We can't say exactly how high,

although they are not as intelligent as humans, of course. Treatment is particularly difficult in the case of highly intelligent birds so we need to pay attention to this point.

On this occasion, we used a drug called Doxycycline. As I mentioned just now, the feeding habits, meaning what and how the birds eat, differs drastically from one individual to another. In the case of many bird species, we give the drug mixed into water for a period of 45 days. However it tastes very bitter - as you will know if you have ever tasted it. So the birds don't want to drink it which can be a big problem. Also, tetracycline group drugs break down easily when exposed to light. So if they are mixed with water and exposed to sunlight they probably won't remain effective half a day later. So this is another problem.

In the case of water birds drugs are administered in capsule form. When an examination turns up a positive result we put a capsule inside a fish and feed the fish to the bird. But birds can detect the presence of capsules with a high degree of accuracy so it can be very difficult to administer the drugs. For instance we sometimes notice that, after a bird has taken a capsule, they manage to bring it up and drop it from their beak.

Apart from this, a variety of drugs are used. In addition to Doxycycline, we use Oxytetracycline, Azithromycin and Clarithromycin type antibiotics. But one problem with these drugs is the side effects. In the case of humans, we can check the liver function while administering the drug to judge whether the result is good or bad. But with birds it is very difficult to draw a blood sample. Budgerigars, for example, only weigh between 10 and 20 grams. If several drops of blood are drawn from such a bird it may faint from anemia. Even taking two drops is difficult, which means trouble. Concerning this treatment, I consulted with Drs. Sanada and Nakano, who are involved in this clinical, and we prepared the slides.

Although the question remains as to whether birds are really cured or not by antibiotic therapy, we can at least say that no fresh discharges of the bacteria have been observed at the facility where the large-scale breakout occurred. This followed the proper administration of drugs and follow-up monitoring over the course of three years. But despite this, according to veterinarians who practice this treatment, sometimes there is a recurrence of disease because of the failure of drugs to work. So it is necessary to carry out follow-up examinations from time to time even when drugs have been administered, and if the disease recurs, drugs must be administered again.

Finally, as a rather unorthodox summary, in order for people to live amicably with birds, I want to emphasize that it is important to provide the birds with everyday health management. I expect that bird owners probably tell their birds, "I'm going out now," or "I'm home." Depending on the birds' behavior or reaction, such as how they eat, etc., the owners should be able to monitor their general health condition.

As has been pointed out many times it is important for owners to have a moderate degree of contact with their birds. Also, when you feel there is something wrong with your bird, contact a veterinarian immediately. The awareness of veterinarians has been improving thanks to a variety of activities. In the case of psittacosis, veterinarians also have to cooperate with doctors. I would ask veterinarians who suspect a bird they have examined of carrying psittacosis to tell the owner to consult a doctor because there is a possibility that the owner may have become infected from their bird. I would also like to ask patients that contract psittacosis to have their birds examined by a veterinarian. In dealing with this disease, we should cooperate tactfully with people in various fields.

Sometimes birds look as if they are having this kind of discussion too. I hope to realize a situation in which birds and people can live together without any problems, and I'd like to end by asking bird owners for their cooperation toward this objective.

Thank you very much for your kind attention.

オウム病を知る

ー鳥と安心して暮らすためにー

福士秀人

岐阜大学応用生物科学部獣医微生物学研究室

岐阜大学

【Slide1】

今日の内容

- 鳥と私たち
- 鳥と人獣共通感染症
- オウム病
- まとめ

【Slide2】

- 鳥と私たち
- 鳥と人獣共通感染症
- オウム病
- まとめ

【Slide3】

日本人と鳥

平安ー鎌倉ー室町

姿や鳴き声の美しさ

江戸

羽色の鮮やかさや手乗り

明治ー大正ー昭和

おしゃべりや歌声

平成

ほととぎす　鳴きつる方を　眺むれば
ただ有明の　月ぞ残れる

【Slide4】

鳥の販売数

(平成14年)

国内生産	84,500羽
輸入数	115,000羽
合計	199,000羽

環境省　ペット動物流販売実態調査報告書（平成15年3月）

【Slide5】

- 鳥と私たち
- 鳥と人獣共通感染症
- オウム病
- まとめ

【Slide6】

鳥類が伝播に関与する人獣共通感染症

- **オウム病**
- **ウエストナイル熱**
- **鳥インフルエンザ**
- **結核、サルモネラ症など**

【Slide7】

オウムインコ類に関係するズーノーシス

疾病	病原体	伝播様式	トリの症状	ヒトの症状
サルモネラ症	*Salmonella*	通常は経口 時として他の経路	不顕性（見掛け上健康）から急性の全身感染	多様、しばしば胃腸症状 時として発熱
オウム病	*Chlamydophila psittaci*	通常は吸入 時として他の経路	不顕性から急性全身感染	不顕性から重篤な呼吸器疾患 死に至ることもある。
エルシニア症	*Yersinia pseudotubaculosis* *Y. enterocolitica*	通常経口	不顕性から急性	消化器症状
結核	*Mycobacterium spp.*	通常経口 時として他の経路	局所から全身	局所から呼吸器や消化器系
外部寄生虫侵襲	接触	不顕性、掻痒 および貧血	掻痒と皮膚病変	掻痒と皮膚病変

【Slide8】

- 鳥と私たち
- 鳥と人獣共通感染症
- オウム病
- まとめ

【Slide9】

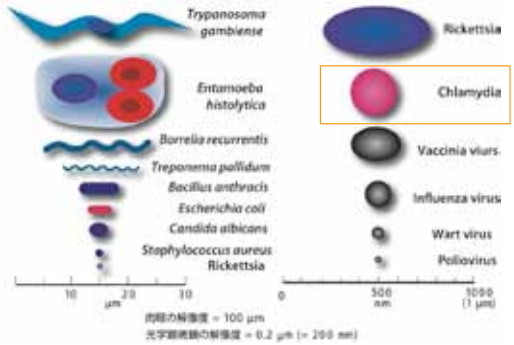
オウム病とは？

20世紀初頭にヨーロッパで流行
日本では1957年に初発例
（輸入例はそれ以前）
鳥が排泄したクラミジアに人が感染し発症

【Slide10】

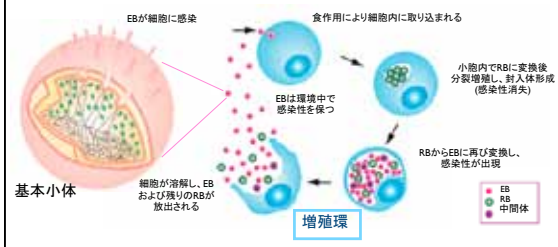
【Slide11】

病原体の大きさ



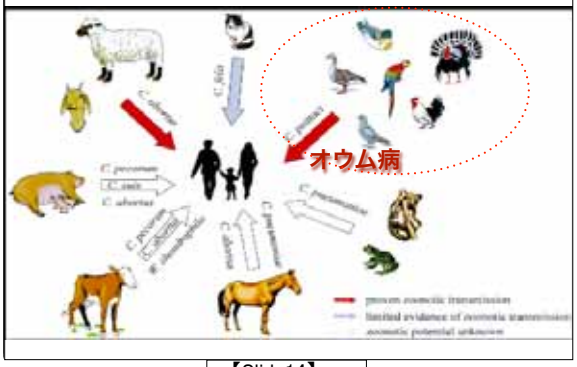
【Slide12】

基本小体：外部環境で長期間生残
網様体：細胞質内のみ・抗生物質感受性

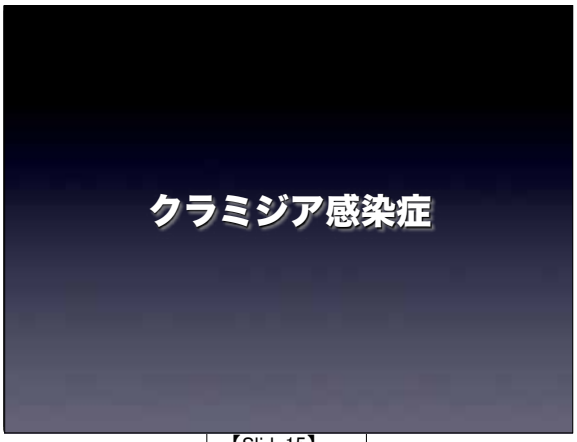


【Slide13】

クラミジアによる人獣共通感染症



【Slide14】



【Slide15】

オウム病（鳥クラミジア感染症）

宿主：18目145種の鳥類, ヒト
原因菌： ***Chlamydophila psittaci***
(Chlamydophila abortus)
分布：世界中のあらゆる鳥種
症状：不顕性感染
元気・食欲不振，羽毛逆立，削痩，緑白色下痢便
発症要因：ストレス，混合感染など

【Slide16】

各種鳥類の症状

比較的良く見られる症状
呼吸器症状，鼻漏，下痢，多尿，沈鬱

神経症状があるとされている鳥種
アマゾンオウム，コンゴウインコ

結膜炎
オカメインコ，セキセイインコ

比較的抵抗性
ハト

【Slide17】

オウム病（人）

潜伏期間は1～2週間

急激な高熱と咳嗽で発症

軽症の気道感染から、肺炎や髄膜炎までの多様な病態

市中肺炎における頻度はさほど高くはないが、中等症までの非定型肺炎と原因菌不明の重症肺炎では、必ず鑑別に入れる必要がある。

【Slide18】

鳥から人への伝播

不顕性感染：無症状で病原体排出
発症：元気消失・食欲不振，削痩，下痢

鳥の排泄物を吸引

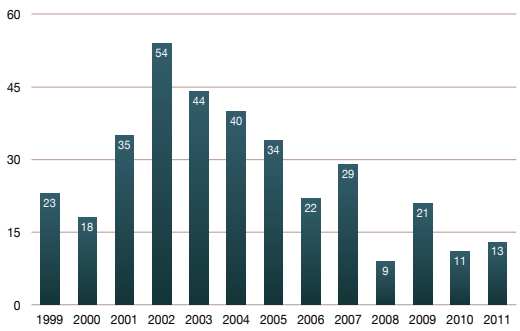
インフルエンザのような症状
重症例では致死的

【Slide19】

オウム病の現況

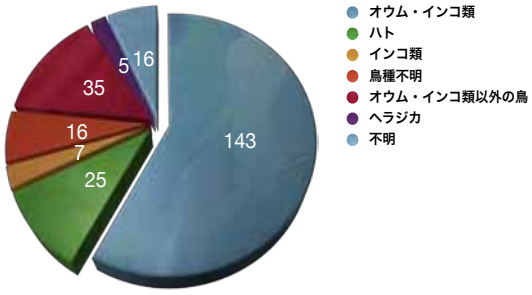
【Slide20】

1999年から2010年における届け出数



【Slide21】

1999年から2007年における届け出に記載された感染源



【Slide22】

鳥類のクラミジア保有状況

【Slide23】

我が国の愛玩鳥における鳥クラミジア症

2006年4月から2010年3月までにクラミジア検査依頼のあった検体

- 愛玩鳥販売業者（2業者，668検体）
- 動物病院（18病院，285検体）
- 鳥類展示施設（7施設，219検体）
- 上記以外，野鳥など（699検体）

【Slide24】

クラミジアの検出方法

1. **採材**
   - 鳥の糞便またはクロアカスワブを採取

2. **DNA抽出**
   - DNA抽出キットを用いてDNAを抽出

3. **PCR法による検査**
   - Nested PCR法またはReal-time PCR法

4. **塩基配列解析**
   - 一部サンプルに関しては塩基配列確認した

【Slide25】

年別クラミジア陽性率

	検査数（羽）	陽性数（羽）	陽性率（%）
2006年	988	13	1.3
2007年	328	7	2.1
2008年	353	2	0.6
2009年	202	8	4.0
合計	1871	30	1.6

【Slide26】

鳥種別クラミジア陽性数

鳥種	検査数	陽性数
オカメインコ	209	3
セキセイインコ	61	2
コザクラインコ	25	1
ヨウム	18	1
キガシラアオハシインコ	12	1
ショウジョウインコ	5	2
テンジクバタン	3	1
ギニアエボシドリ	3	1
ハツハナインコ	2	1
ソデシロインコ	2	1
コガネメキシコインコ	2	1
バナマボウシインコ	2	1
アヒル	35	1
上記以外の鳥種	1421	10
鳥種不明	71	3

【Slide27】

鳥種別クラミジア陽性数

主に国内繁殖・生産小型鳥

鳥種	検査数	陽性数
オカメインコ	209	3
セキセイインコ	61	2
コザクラインコ	25	1
ヨウム	18	1
キガシラアオハシインコ	12	1
ショウジョウインコ	5	2
テンジクバタン	3	1
ギニアエボシドリ	3	1
ハツハナインコ	2	1
ソデシロインコ	2	1
コガネメキシコインコ	2	1
バナマボウシインコ	2	1
アヒル	35	1
上記以外の鳥種	1421	10
鳥種不明	71	3

【Slide28】

鳥種別クラミジア陽性数

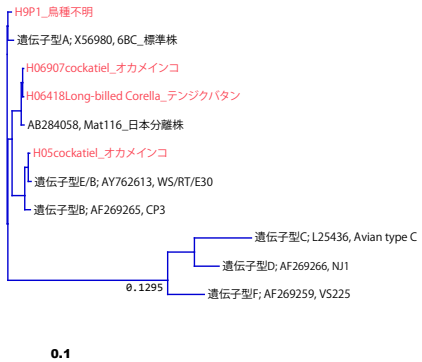
主に国内繁殖・生産小型鳥

鳥種	検査数	陽性数
オカメインコ	209	3
セキセイインコ	61	2
コザクラインコ	25	1
ヨウム	18	1
キガシラアオハシインコ	12	1
ショウジョウインコ	5	2
テンジクバタン	3	1
ギニアエボシドリ	3	1
ハツハナインコ	2	1
ソデシロインコ	2	1
コガネメキシコインコ	2	1
バナマボウシインコ	2	1
アヒル	35	1
上記以外の鳥種	1421	10
鳥種不明	71	3

主に海外から輸入される大型鳥

【Slide29】

系統樹　＊NJ法で作成



【Slide30】

野外の鳥：ドバトの調査例

県	検出率	
北海道	28/35	80%
東京	14/23	61%
神奈川	1/4	25%
岐阜	41/290	14%
愛知	10/81	12%
大阪	11/29	38%
広島	1/1	100%
合計	106/463	23%

岐阜県における月別検出率

2003年			2004年		合計
9月	11月	12月	4月	6月	
11/16	11/11	19/187	0/50	0/26	41/290
69%	100%	10%	0	0	14.1%

23%から検出

(Tanaka et al. 2005)

【Slide31】

オウム病クラミジア感染症の治療

【Slide32】

オウム病の ドキシサイクリンによる 治療方法

適応鳥種	投与期間	投与経路
全鳥種	45-60日	飲水
オウム類	45-60日	食餌
ヒインコ	45-60日	食餌
小型コンコ・ カナリア	45-60日	食餌
ゴシキセイガイインコ	45-60日	ネクター
水鳥類	45日	食餌
水鳥類	45日	経口

【Slide33】

オウムインコ類におけるオウム病の治療方法例

薬剤	投与期間	投与経路	備考
ドキシサイクリン	45日	飲水，経口，餌	ヨウム，ボウシインコ，コンゴウインコ，バタン類で嘔吐
オキシテトラサイクリン	5~14日	餌，飲水	ヨウム，ボウシインコ，コンゴウインコ，バタン類で嘔吐
アジスロマイシン	30日	経口	肝機能、腎機能に問題がある場合は使わない
クラリスロマイシン	30日	経口	
ミノマイシン	30日	経口，飲水	
クロルテトラサイクリン	45日	飲水，餌	ヨウム，ボウシインコ，コンゴウインコ，バタン類で嘔吐

【Slide34】

まとめ

【Slide35】

鳥と仲良く暮らすために

鳥の日頃の健康管理

鳥との適度な接触

おかしいと思ったら獣医師にすぐに相談

獣医師と医師の相互協力

【Slide36】