



TICK RELATED DISEASE IN CAGE AND AVIARY BIRDS

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Avian medicine is a young, challenging and fast developing field. It is a sad reflection that there is very little original research being undertaken in any of the UK veterinary schools into many of the new and emerging bird diseases. One of the things which makes working as an avian vet genuinely exciting, is the potential to discover new diseases, even if at the time one does not find all the answers.

The latter is just the case with 'tick related disease in cage and aviary birds'. This was a condition which the author first became aware of some 15 years ago. Since then we have investigated the condition, it is sad to report, that even after all these years, although we have some, we do not have all of the answers.

Ticks are second only to mosquitoes in terms of the numbers of infectious diseases which they are known to spread. Ticks tend to enjoy a three year life cycle, but only feed from their host (take a meal of blood) once a year (for just a week at a time), immediately prior to undertaking their next key stage of 'life development'.

During this research study, ticks and diagnostic samples from effected sick or dead birds were collected and subjected to investigations. We soon discovered that contrary to previous beliefs, that the ticks which cause disease in birds are specific 'bird ticks', namely *Ixodes frontalis*, as opposed to sheep, deer or hedgehog ticks (this is despite looking grossly identical to sheep ticks). So birds do not suffer tick related disease, subsequent to any association with sheep or other mammal. In this study 70 ticks were recovered from birds of 32 different species. Half the birds were captive, the remainder being free living birds. 15 of the 70 effected birds were simply found dead, half of the latter were psittacine birds.

How Does Disease Occur?

Disease is seen most commonly in outside birds, who occupy aviaries under, or close to trees. So the likely scenario is that other wild birds infected with ticks (most commonly collared doves, swallows, or raptors), roost in the trees over hanging the aviary. If by chance the ticks have been on these birds for about a week, having become fully engorged, they will be ready to fall off. The ticks land on the ground and take cover about the floor of the aviary. They mind their own business, hoping not to be eaten, going about their daily routine for the whole of the next year. Annual tick activity, (e.g. feeding and breeding), is absolutely dependent on weather

conditions. Annual tick activity (including disease in birds), has occurred in any month (bar December and January), although the highest incidence is August and September. Tick disease seasons tend to last for only 7-10 days, across the whole country. However in 2006, was the worst year since the research project commenced, with cases being recorded regularly for nearly 2 months. Was this pure chance, or was this yet another effect of the warming climate. When disease does occur, numbers of birds are simultaneously effected over much of the country.

Ticks may attempt to attach to any part of a bird, although they would be instantly groomed off everywhere the beak can get to, i.e. not the head and neck, so this is where ticks will be found. As soon as the tick has attached, it injects 'anticoagulant' under the bird's skin, so that the surrounding blood does not clot, such that the tick can suck it out. When a tick initially attaches it would be very small, but as it fills with blood it gradually swells, eventually reaching some 4-6mm in length, appearing similar to a 'grey coloured coffee bean'.

Birds may be seen looking poorly, with closing or swollen eyelids, or swelling about the face, but birds are often just found dead. Any bird found suddenly dead in an aviary, should be carefully studied. If you find an area of severe bruising (a big purple patch), around the face or neck, then this bird has died of tick related disease, despite the fact that a tick may not be present.

What are the clinical signs in birds effected by tick related disease?

Haemorrhage around the face or neck
Swollen eyelids, face or neck
Sudden unexpected death

Is tick related disease Infectious 'bird to bird'?

Absolutely not, **BUT**, if one bird has been effected, you instantly know that you have ticks in your vicinity and that weather conditions are such that ticks are active. As such all other birds in the vicinity are at risk **NOW**. Any sick birds should be presented to an experienced avian vet asap. The author has put together a therapeutic protocol, which tends to be effective in infected birds. In the recent study, 50% of effected untreated birds die, many of whom were simply found dead, with no premonitory signs. However overall, less than 20% of treated birds died, with none of the last 8 birds treated dying.

What action should you take?

Check all your other birds, spraying them with recommended levels of a suitable and effective parasitic spray (see your avian vet for advice on safe and correct drugs and dose rates). Also action should be taken to treat any ticks which might be active on the floor at that time (see your avian vet).

So I had ticks this year, how can I prevent it in future years?

Once ticks are in your vicinity, you should consider your birds to be at risk in future years. Suitable preventive action is essential.

1. Remove any over hanging trees.
2. Keep birds in suspended cages, preferably with ground living birds living underneath them (e.g. poultry or quail), the latter will eat any ticks they find on the ground. It is interesting that in regions where free range poultry have been

banned because of Avian Influenza risks, the incidence of tick related disease has increased dramatically in all species.

3. One could spray the ground around your aviaries on a prophylactic basis annually prior to the main risk season. Whilst this might be effective, the author would caution keepers against this for fear of causing collateral poisonings, perhaps even effecting your own birds.
4. Birds who are at risk, could be sprayed during the main risk period, on a monthly basis. This may well be sensible if you are aware your birds are at risk, but this could conflict with breeding and rearing seasons.

So what makes infected birds die?

Sadly this remains a mystery. In the author's project, infected birds and ticks were screened for commonly identified infectious diseases transmitted by ticks, i.e. *Borrelia* spp, *Babesia* spp, *Bartonella* spp and *Ehrlichia* spp. all with negative results.

Can bird keepers help?

Yes please. If you find a live tick on any of your birds, please submit this as follows:

1. Place the tick **still alive** in a suitable container, with air holes in the lid, with a 2" square of kitchen paper, which has been slightly dampened.
2. Please mail this to:
"Tick Project", Great Western Exotic Vets, 10 Berkshire House, County Park Estate, Shrivenham Rd, Swindon, SN1 2NR).

The tick will have just had a meal of blood and will not need to eat for a year – so please do not worry you are being unkind.