

# **NTCGB: Canine Herpes Virus**

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When Norfolk Terrier people get together the topics of conversation always include:

- The inability to get their bitches in pup
- 'Fading puppies'
- Small litters (in a breed already known for small litters)
- Litters where some/all pups are underweight

It has been known for a while that the Canine Herpes Virus was somehow involved in these observations witnessed by breeders.

The Canine Herpes Virus has been described as 'ubiquitous', ie. commonplace and present most of the time. In fact, most studies show that around 80% of all dogs in England have been infected at some stage, with no obvious clinical disease. This situation has led to the veterinary profession under-estimating its importance.

In the Norfolk Terrier breeding world there is frequent head-shaking, resigned sighing, and dropping of shoulders when asked: 'is she?'. And, frustratingly frequently, 'she is not'. There is a very strong possibility that this situation is linked to the presence and behaviour of the Canine Herpes Virus. In the light of this possibility I think it will be very useful for all of us to find out a little more about this virus and what we can do about it.

Viruses succeed by inserting themselves in the genetic material of the host (the dog, bitch, or pup) and multiply as the cell multiplies. This means that they never float about freely in the environment, but are always found in cells. They choose specific cells in which to do this, and this includes the cells of, especially, the reproductive system of the bitch. The Canine Herpes Virus survives undetected in nerve-cells at the base of the spine (sometimes elsewhere) and starts to multiply when the she undergoes 'stress'. In the case of humans who carry it, the Herpes Virus will result in lip and mouth ulcers when we experience stress, for example.

Being pregnant amounts to physical and physiological stress. The multiplying virus targets the placenta (the life-support system of the foetus), thereby disrupting the delicate and crucial function of foetal growth. The consequences include early death and re-absorption of the foetus (before any outward or palpable sign of pregnancy) and later abortions, also with re-absorption of the foetuses (visible abortions are rarely witnessed). We identify this as 'fertility' problems in our bitches. The sad thing is, these bitches WERE very likely pregnant.

Another important consequence of the virus is this: you manage to produce a lovely little litter (with some or all pups on the small side), but they do poorly and die in the first few days despite heroic efforts from all involved. These are pups that would have been infected before birth, but survived because a sufficient quantity of placenta remained

unaffected. They succumb because their immune system is fatally impaired, ie. they cannot withstand the normal infections of puppy-hood. Sometimes apparently healthy pups can be infected by the bitch soon after birth (the stress of giving birth would have created the ideal conditions for the virus to multiply) and start to show 'vague disease', including symptoms like weight loss, a poor suckling reflex, diarrhoea (although this is hard to identify when the faeces are soft anyway), and failure to grow. It is now known that Canine Herpes Virus is a significant factor in the myriad of causes of the 'Fading Puppy Syndrome'.

A diagnosis can be made in the pup by post-mortem examination. I would advise this for larger breeding establishments if there is suspicion that the virus is involved. Changes (usually haemorrhages) occur in the liver, spleen, kidney, lungs and sometimes the heart-muscle. It is very difficult to test for since the virus is extremely fragile and usually does not survive the journey to the laboratory. There is talk of a blood test which may become available before too long.

Like with many viruses there is little/no treatment. New human anti-viral drugs may have a role, but that is for the future – and prohibitively expensive. What do we do in the meantime? For larger breeders the following is essential:

- ≡ Scrupulous hygiene. Remember, the virus is to be found in cells. Cells are found in all organic matter (faeces, urine, skin, saliva) left by dogs and bitches. A good place to start is to clear faeces and wash away urine as soon as possible. Your cleaning program MUST include a disinfectant which kills viruses (your vet may be able to help you with this). It will also keep other viruses like Rotavirus, Parvovirus, and Coronavirus under control. Good hygiene also limits secondary bacteria, so significant in the newborn pup with the virus.
- ≡ Separate (or re-home) bitches known to have a history of infertility from all the others. They are likely to carry the infection (without showing symptoms) and can shed virus when unhappy or stressed, even when not pregnant.
- ≡ Quarantine pregnant bitches, reduce all stress, and allow them to lead a happy and quiet life.

For the big breeders, and everybody else, the Canine Herpes Virus Vaccination may prove to be a great help. It is given twice. The first dose is necessary to counter the spread of virus across the placenta in the early stages of pregnancy, while the second injection is to stop/limit the production and spread of virus around the time of whelping. The vaccination program is, therefore, as follows:

- ≡ The first injection anytime between early heat to 10 days after mating. I would recommend that it is done a day or two before mating.
- ≡ The second injection 1- 2 weeks before whelping.
- ≡ It might be useful to do the second injection around the time of whelping.

This program must be repeated with every subsequent mating.

Most veterinary practices do not routinely stock the vaccine. It is worthwhile letting your practice know a week or two in advance that you would like your bitch to have the course. It comes packed as a pair of vaccines, so they cannot use the excuse that they do not wish to order a large amount for just one patient.

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