

Fading Puppy Syndrome

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Fading puppy syndrome is a clinical description used to cover many infectious and non-infectious causes of puppies which result in death within the first two weeks of life. The puppies are born of good average birth weight and gradually lose the suckling reflex, become inactive and die. Most mortality occurs during the first 3.5 to 5 days of life and should be investigated as some have a preventable cause whereas others yield no helpful diagnosis. Losses of puppies up to weaning average around 12% with more than 65% at whelping and during the first week of life, few puppies die after 3 weeks. Congenital defects probably account for around 1-2% of deaths with some being hereditary and other defects of development.

Non-infectious causes include problems with thermoregulation, dehydration, hypoglycaemia and immune system immaturity. These four areas are noted as the newly born puppy's most vulnerable points. At birth the puppy has a body temperature of 35.5°C (96°F) rising to 38°C (100.5°F) by day 7. An attentive mother will keep the puppies warm enough as they stay within the environment of the mammary gland but a bitch with a large litter or one who is tired after a protracted whelping may not keep all the puppies close by her. Shivering starts at day 6-8 and the puppy is more able to generate its own body heat. Dehydration can occur very quickly if the puppy does not feed little and often. Kidney function is initially very immature and cannot efficiently retain water. This is why hand reared puppies should receive frequent small feeds. Hypoglycaemia is a low blood sugar. The puppy is born with only a small reserve and must feed soon to replenish this. Hypoglycaemia results in a sluggish puppy with a poor sucking reflex.

Birth weight should double within the first 10 days and regular weight gains should occur from day 1-the use of fine kitchen scales helps with large litters which may have more competition for teats. The importance of gaining the first milk-colostrum cannot be overstressed. The puppy gets 5% of its maternal antibody across the placenta and 95% from colostrum which must be taken within 12-24 hours. If a bitch has a protracted labour it is important the first puppies born get to suckle (this also helps with natural oxytocin release which stimulates further uterine contractions).

Fading puppies typically show poor sucking reflex, lethargy or unusual restlessness with a plaintive cry. The normal puppy spends long periods in deep sleep interrupted by body twitching which disappears after 4 weeks. Loss of this pattern indicates ill health. The belly should be rounded but not gassy sounding and the coat sleek. The urination and defecation reflex is activated by the mother licking and an unkempt coat indicates poor mothering.

Investigation of fading puppies shows low body weight and an empty stomach and intestinal tract. The body should be kept chilled not frozen for the vet to investigate as this makes it easier to get meaningful samples for infectious disease and to check for structural abnormalities. Some work has suggested these puppies may have a problem with lung surfactant a substance implicated in sudden death syndrome in infants but this is not proven.

Infectious causes of dying puppies include bacteria, viruses and parasites. Flea infestation may be heavy enough to result in severe anaemia which occasionally results in death. There are products licensed to use on puppies two days old and other for use on the dam for control which may be safely used. Worm burdens may be sufficiently high to cause obstruction of the small intestine. It is worth remembering

that roundworm larvae can cross the placenta and are transmitted in milk. The type of wormer used during pregnancy should be carefully considered as not all will stop migration of larvae into the puppies. Toxoplasma infection is a rare cause of problems. There is a public health risk as it may cause problems in pregnant women too. Other rare causes include Giardia and Coccidia protozoan parasites which can both cause diarrhoea and Neospora which can cause hind limb paralysis at 5-6 weeks. Bacteria are often isolated from post mortems but their role is not always clear. There have been reports of septicaemia causing death or poor weight gain. Antibiotics should be used with care as they can upset the natural developing gut microflora. Brucella canis is not present in the UK at the moment but anyone involved in breeding with dogs from other countries should become aware of it. It may cause abortion, stillbirths or rarely weak live puppies. Bordetella bronchiseptica (the most common UK cause of kennel cough) was implicated in one litter which I have seen but has definitely been shown to be a problem in kittens. Exposure of in whelp bitches to coughing dogs should be avoided. The syndrome "Kennel Cough" included many infectious diseases and most manifest in the same way so unless the diagnosis is conclusive one should keep coughing dogs isolated from other dogs.

Viral infections are an uncommon cause of fading puppies with most occurring as maternal immunity starts to drop at 5-6 weeks. Canine Herpes Virus (CHV) is the most common of the viral infections to cause problems. The outcome from infection depends on the time of gestation the bitch is infected. In early pregnancy there may be abortion but infection middle to later on in gestation will result in puppy death and mummification. Infection in late pregnancy results in premature whelping and weak puppies showing abdominal pain and continual crying. Puppies may take several days to die and even last a few weeks. Most bitches will seroconvert which means they develop an immunity to the virus however if they are bred from again they and any kennel mates should be vaccinated with the new CHV vaccine. At the time of infection they may also be a source of infection to other kennel members and should be isolated from other pregnant bitches. It may be possible for some bitches to become carriers and shed the virus at times of stress so consideration should be made to whether it is wise to breed from some a bitch again. Be aware that CHV is one of the Kennel Cough collection and the symptoms are not definitive in non pregnant dogs.

Canine parvovirus is less common except in colostrum deprived puppies when it can cause fatal heart problems. It is possible for canine distemper virus to cross the placenta causing neurological signs at 4-6 weeks of age but it may also cause abortion, stillbirths or fading puppies depending on the stage of gestation the dam is infected. Puppies which survive may have severe damage to their teeth enamel and a permanently poor immune system.

Prevention of infectious causes of early puppy death involve keeping a clean environment-runs should be kept clean (particularly important for disease such as Giardia and Coccidia) and regular use of wormers will reduce the problem of parasite burdens and environmental contamination. Vaccination prevents the problems of viral disease and there is a new vaccine available for Canine herpes Virus to be given during pregnancy as well as vaccines for Canine Parvovirus and Distemper. For people who are concerned about over vaccination it may be helpful to talk to your own vet about the levels of disease in your area and the use of antibody titres to check the immunity level in your dogs. Work has been done to show many dogs do not require all of the components of vaccines every year and some companies now produce vaccines for alternate year use.

To summarise it is always helpful to keep records of any neonatal losses and the cause of death if known. There are some obvious causes such as overlaying in anxious or inexperienced bitches and these are often not preventable. Losing one puppy in a large litter is a common occurrence and one may find no cause but when multiple losses occur determining the cause can help prevent losses with future litters.

Meanwhile the health monitoring of our breed continues and if anyone wishes to contact me you may use email: <mailto:samgoldberg@btinternet.com> or my address in the members list.

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