BRUCELLA CANIS
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Canine brucellosis has long been the scourge of beagle owners’. This latest “outbreak” of cases is really just a flare up of an ongoing problem. Over the years beagle kennels have been plagued by many small outbreaks, and the disease almost appears to be endemic within the beagle population as a whole. The stories of these many small outbreaks seem to come out of the woodwork when news of a large concentration of cases becomes public. Stories of kennels in the upper peninsula of Michigan, New York, Indiana, Kentucky, Tennessee, Georgia, Mississippi, Louisiana, and Arkansas which have been completely depopulated due to Brucella canis over the past few years have all come to light over the past 10 days. The problem is by no means a new one, but the hope is that the current problem will stir the owners, registries, and government bodies into a concerted effort, which will eradicate or at the very least greatly reduce the incidence of this disease.

Brucella canis is a small Gram-negative bacteria, which infects its host by penetration of the mucous membranes of the oral cavity, conjunctiva, and vagina. In the host canine the organism is found within mononuclear phagocytes. An infected animal will shed the organism in varying concentrations in the secretions of the genital tract, urine, milk, seminal fluid, and aborted fetal materials and fluids. The most likely source of infection is aerosolization of materials from an aborting female; however, the disease appears to be spread by close contact between an infected dog and a non-infected dog. It is a commonly held belief that dogs are safe from Brucellosis unless used for breeding; this is a fallacy, which must be dispelled. Venereal transmission is most common, but sexual contact is not required for your dog to become infected. In infected kennels, the pregnancy rate may be as low as 30%, abortion rates may be as high as 80%, and the number of pups surviving to weaning will be as low as 0%. Outside of the reproductive problems it causes, infection with Brucella canis has few if any obvious clinical signs. In the male clinical signs are minor if present at all. Early in the course of the disease, there may be scrotal and testicular swelling. Later the testicles may atrophy or shrink. Remember, infertility may be the only sign that a male dog has with this disease. Only five weeks after infection semen quality is diminished, and by twenty weeks more than 90% of sperm cells are abnormal. Fertility problems are the only clinical signs in female dogs. Abortion can occur any time during pregnancy, but is most common in the later part. Early embryonic death or a failure to conceive may also occur. Occasionally a litter may be carried to term, but the pups die within hours up to a few days old. This fact and the way it can silently creep through a kennel has led some houndsmen to refer to it as a “ghost disease.”

One problem, which has always been an issue when dealing with this disease, is the stigma that accompanies having a positive dog. Many houndsmen would rather shoot themselves in the foot than have it be known they have a Brucellosis problem, as it could literally destroy the name of a kennel forever more. This leads to a great deal of dishonesty and half-truths, which travel like wildfire on the Internet. Situations arise where a person tests a handful of hounds, finds them positive, and then destroys the rest of his hounds before someone finds out. Even worse are the individuals that know they have a problem and sell hounds off to the unsuspecting or uninformed. The reverse is also true where rumors are deliberately spread at times like these to cast uncertainty about the status of a kennel’s hounds. These behaviors make it nearly impossible for clubs, associations, and even the state to accurately assess and act upon the situation. Famous dogs reported as positive and destroyed have then been reported as clean and healthy. Areas where a significant number of cases have been reported are called clean and safe to keep folks from staying away. This stigma associated with Brucellosis carries beyond the beagling community. Bird-dog triallers have been known to worry about contact with beagles and other hounds due to a perceived Brucellosis problem. As beaglers, bird-doggers, and others utilize many state-owned management areas, it is imperative that any problem with one trialling group be addressed for the safety of the others.
Diagnosis of Brucellosis must be done cautiously, as it can destroy a kennel. One looks at history, clinical signs, physical exam findings, and then laboratory data to confirm the diagnosis. Three main tests are used:

**Rapid Slide Agglutination Test (RSAT)**

This is the old familiar card test. A very sensitive, but unspecific test, it is used as the common pre-breeding screen. Its lack of specificity will sometimes create “false positives”, but it will not miss a positive dog. Any dog positive on this test requires re-evaluation by another method.

**Tube Agglutination Test (TAT)**

This test is less sensitive than the RSAT, but is highly specific. It is best used as a confirmation test for dogs positive on the card test.

**Bacterial Culture**

This test is the “Gold Standard” for any bacterial disease. Blood, fluid, or tissue is inoculated into a special growth medium. This process is costly, time consuming, and is rarely done in clinical practice.

**Control of Brucellosis in canines is no different than the control of any infectious disease.** The classic approach by houndsmen is to require a negative test on any female from outside their kennel that they breed. This is a good first step. Unfortunately, many do not test their own females before breeding “in-house” and infrequently test their males. This leaves a lot of gaps in control of the disease at the breeders’ level, and does not touch the rest of the field trial hounds. Treatment and prevention of brucellosis involves a stringent policy of testing, and then euthanizing positive animals. It is neither economical nor ethical to keep a B. canis positive dog in a kennel. Testing should be done on all new additions to the kennel, females prior to breeding, and males at least four times each year. If a positive dog turns up, then monthly testing and culling must be done. This should be continued until the entire kennel tests negative for three consecutive months.

One step currently under discussion is to require any hound to be entered for competition to have a negative Brucellosis RSAT (rapid slide agglutination test) within the twelve months prior to the event. This will put an increased workload upon clubs and associations, but it appears to be a necessary step if the disease is to be controlled. Many argue that the test is only good on the day it is drawn, but imposing stricter testing requirements would simply encourage more cheating, forging forms, etc. These requirements would be the same as many states have adopted for control of Equine Infectious Anemia, another disease where the test is only a snapshot of the day the blood is drawn. Looking upon the competition hound testing as a sentinel for all hounds, it should turn up kennels and areas where Brucellosis exists without the owners’ knowledge. It is hoped that the major breed associations will adopt this type of requirement and clean house themselves. This option would be much more palatable than having the state veterinary medical health officials require a current health certificate and negative Brucellosis test for dogs traveling in and out of their states.

It is a widely held belief that Brucella canis can be successfully treated. This is a bit like pointing a half-loaded gun at the hounds in your kennel. The protocols used to treat this disease involve surgically sterilizing the animal (spay or neuter), and then using a long-term cocktail of antibiotics. This can get animals to test negative. The antibiotic regime may even enable some females to be able to carry pups. Infectious disease experts agree that the success rate and the risks are so great that this is neither a safe nor viable option for kennel owners.

Clamor for a canine vaccine against Brucellosis has been quite loud from certain sectors. Experimental studies to create such a vaccine have been very unrewarding. The intracellular nature of the organism makes creating such a vaccine inherently difficult. An effective vaccine for this disease would have to provide good immunity without interfering with diagnostic testing. This is not, and may never be possible. Many do not realize that creation of such a vaccine may actually increase, rather than decrease, the need for testing as well.

Many do not realize that there is a small, but very real human risk from exposure to B. canis. Contact with aborting females or fetal tissues are the most common cause; however, cases have occurred from contact with asymptomatic male dogs. Signs of the disease in people are fever, chills, malaise, and weight loss. Long-term problems include endocarditis, meningitis, arthritis, hepatitis, and abscesses in the body’s tissues.

Please take this disease seriously. Now is the time for beaglers to act together to try and control the ongoing problem of Brucella canis. Contact and pressure your clubs and registries to take action that will lead to increased control of this disease and increased safety for our hounds.

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