ABSTRACTS

6th International Symposium on Canine and Feline Reproduction

&

6th Biennial EVSSAR Congress

European Veterinary Society for Small Animal Reproduction

"Reproductive biology and medicine of domestic and exotic carnivores"

University of Veterinary Sciences
9th – 11th July 2008
Vienna, Austria

Editors: G. England, P. Concannon, S. Schäfer-Somi

Reprinted in IVIS with the permission of the Symposium Organizers
CANINE BRUCELLOSIS IN ARGENTINA: A RETROSPECTIVE STUDY OF 731 SUSPECTED CASES

Wanke, María M.; Baldi, Pablo C.; Loza, María E.; Delpino, M. Victoria; Monachesi, Norma E.; Comercio, Elida A.
Facultad de Ciencias Veterinarias, Area de Teriogenología. Chorroarín 290 (1427) Cap. Fed. Tel-Fax: 4524-8425. E-mail wanke@fvet.uba.ar

The clinical records of 731 dogs with suspected brucellosis referred to our service between 1993 and 2007 were retrospectively analyzed. Dogs investigated had signs and/or symptoms compatible with brucellosis or were in close contact with these suspicious cases. A serological screening was performed with the rapid slide agglutination test with 2-mercaptoethanol (2ME-RSAT) using the M-strain of *B. canis* [1]. Positive cases were also investigated with ELISA tests using the hot saline (HS) extract of *B. canis* and the LPS-free cytoplasmic fraction of *B. abortus* (which includes antigens common to all *Brucella* species) [2]. Blood cultures were performed whenever possible. The retrospective analysis focused on the distribution of cases by age, gender and breed, type of breeding (pet or kennel), clinical findings, and percentage of cases within affected kennels.

Serological tests were performed on 1115 serum samples from 731 dogs that belonged to 55 different breeds or were mixed breed. Most dogs (n = 524) came from kennels but others (n = 207) were domestic pets. Sex distribution was 70% females and 30% males; however, this changed to 48% females and 52% males when dogs from kennels (where females are majority) were excluded. From the 731 dogs evaluated, 318 (43.5%) were serologically positive for canine brucellosis; *B. canis* was isolated in 100 cases. The seropositive dogs were clustered into 135 different foci of infection (each kennel was considered a single focus). Cases belonged to 40 different breeds, including German Shepherd (53 cases), Toy Poodle (36), mixed breed (31), Labrador Retriever (n = 27), Beagle (n = 27), Shar Pei (21), Golden Retriever (13), Doberman (13), and English Cocker Spaniel (11). This distribution differed a little when incidence was analyzed on the basis of foci instead of individual cases, the most frequently affected breeds being German Shepherd (30 foci), mixed breed (18), Labrador Retriever (13), Beagle (12), Toy Poodle (9), Doberman (9) and Siberian Husky (9).

A majority of dogs (cases and seronegatives) was between 1 and 3 years old. The incidence of brucellosis decreased with age, probably because more than two thirds of the animals evaluated belonged to kennels with a young population.

Infection was detected in 9 large kennels. The incidence of positive cases per kennel was close to 47%, except in one kennel in which it was 25%. In two kennels only some of the existing breeds were affected.

Among the 318 serologically positive cases, 73% presented signs and/or symptoms compatible with brucellosis, including abortion (32%), discospondylitis (4%), orchitis (25%), epididymitis (8%), infertility (8%), uveitis (5%), perinatal mortality (4%), prostatitis (2%), testicular atrophy (1%), and others (4%). The remaining 27% of seropositive cases were did not present any symptoms and they were mostly detected during epidemiological surveys of the affected kennels. The distribution of symptoms was similar among serologically negative dogs, the most frequent being abortion (37%), infertility (15%), perinatal mortality (13%), discospondylitis (8%), orchitis (8%), epididymitis (7%), uveitis (3%), prostatitis (2%) and other symptoms (7%). This shows that symptoms typical of canine brucellosis can also result from causes different to *B. canis* infection. Among the 731 dogs evaluated, only 2 were negative by all the serological tests despite having canine brucellosis confirmed by bacteriological isolation.
Several conclusions can be drawn from this study. Brucellosis distribution by breed must be interpreted with caution. For example, there are a few Shar Pei in Argentina and the presence of 21 cases from this breed could suggest that this breed is particularly susceptible to brucellosis. However, all these 21 cases belonged to the same kennel (i.e., to the same disease focus). In addition, the high incidence of brucellosis among German Shepherds is explained by the fact that half of the dogs from pure breeds in Argentina belong to that breed.

Regarding distribution by gender, a higher incidence was observed among females. However, a large proportion of the dogs evaluated belonged to kennels, where most animals are females. If distribution by gender is analyzed only among dogs from private owners (pets), the increased incidence among females is no longer observed. A similar bias by the high proportion of kennel dogs is observed in age distribution. There was a marked tendency to brucellosis among dogs from 1 to 3 years old. However, all the affected dogs older than 6 years belonged to private owners, since animals of this age are rare in kennels.

Interestingly, 27% of the dogs with positive serology for *B. canis* (including some with bacteriological isolation) did not present clinical manifestations of brucellosis. This finding suggests that the disease may be underdiagnosed in the general dog population. All the clinical manifestations found in seropositive dogs were also detected in seronegative ones, indicating that no clinical feature is specific of canine brucellosis. Notwithstanding, the presence of such manifestations should raise the suspicion of a potential *Brucella* infection.

In general, serological tests were highly useful for detecting *B. canis* infection. However, two dogs with bacteriologically confirmed infection were negative to all tests. In one case, however, the identification of the isolate as *B. canis* could not be confirmed since the culture was not processed in the reference laboratory. The other case occurred in a kennel with a very recent history of brucellosis and it is possible that this dog had an incipient infection with antibody levels still too low to be detected. Unfortunately, this dog was lost to follow-up.

**References**

1. Carmichael LE and Joubert JC. A rapid slide agglutination test for the serodiagnosis of *Brucella canis* infection that employs a variant (M-) organism as antigen. Cornell Vet. 1987; 77: 3-12.