

Primer reporte de espiroquetemia en un perro de Argentina**First Report of spirochetemia in a dog from Argentina**Mera y Sierra, Roberto^{1,2}; Biglieri, Sergio^{3,4}; Martín, María Laura³ y Neira, Gisela^{1,5}¹Centro de Investigación en Parasitología Regional (CIPAR). Universidad Juan Agustín Maza.²Laboratorio Mera.³Veterinaria Bustelo-Biglieri.⁴Cátedra de Clínica en Pequeños Animales. Facultad de Ciencias Veterinarias. Universidad Juan Agustín Maza.⁵Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET).

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Palabras clave: Espiroqueta; Garrapata; Perro**Key Words:** Spirochete, Ticks; Dog

Canine vector borne diseases are expanding worldwide with implications both in animal and human health. Tick borne diseases have increased dramatically in the past ten years; new diseases have emerged and their geographical distribution has spread. In the province of Mendoza, in Midwestern Argentina, diseases previously not reported such as ehrlichiosis, babesiosis and hepatozoonosis have been diagnosed. In humans, rickettsiosis has been reported. The species of ticks described affecting dogs in the province are *Rhipicephalus sanguineus* and *Amblyomma tigrinum*. To the best of our knowledge, there are no reports of *Borrelia* in dogs nor has spirochetemia been reported in a dog from Argentina. Relapsing fever due to varied species of genus *Borrelia* have been reported in dogs in the USA, Israel, and in Spain. The objective of this work is to report a case of spirochetemia in a dog from Mendoza, Argentina. In June 2020, a 14 year old male mongrel dog was examined at a private veterinary clinic in Lujan de Cuyo, province of Mendoza, Argentina, due to a severe urinary obstruction. The owners had the dog since it was a puppy and it has never traveled outside of the province. Surgery was indicated, and a routine blood exam was performed at a private veterinary laboratory. The following haematological parameters were determined in an Abacus Junior Vet[®] automated haematology analyser: red blood cell count (RBC), haemoglobin concentration (HGB), packed cell volume (PCV), platelets (Plt) and total leukocyte count (WBC). A blood smear was fixed with methanol and stained with Giemsa to perform manual relative and differential cell counts. Biochemical parameters were determined using an InCCA[®] auto analyser. The haematological results were: PCV 29%; RBC

4,760,000 xmm³; MCV 61 (fl); HGB 9 g/dl; Plt 654,000 x mm³; WBC 43,300 x mm³; neutrophils 83% (35,964 x mm³); band neutrophils 3%(1,300 x ml); lymphocytes 3%(1,300 x mm³); monocytes 11%(4,766 x mm³), eosinophils 0%. Upon examination of the stained blood film, numerous spirochetes were found; many appeared tangled and were not completely stained. The serum chemistry results were: urea 108 mg/dl; creatinine 1,3 mg/dl, AST 26 IU/L; ALT 66 IU/L; ALP 278 IU/L; total proteins 6,37 gm/dl; albumin 2,94 mg/dl; globulin 3,43 mg/dl; A/G ratio 0,85. Due to the possibility of an infection by *Borrelia* sp., treatment with doxycycline was initiated. The patient subsequently underwent surgery with a favourable outcome and spirochetemia disappeared. A serologic exam for ehrlichiosis was performed using an immunocromatographic technique and yielded a positive result. The relevance of finding a dog with spirochetemia is that it highlights the importance of searching for new tick transmitted pathogen since all studies in which molecular studies were performed when spirochetemia was present, they all identified agents of Tick Borne Relapsing Fever (TBRF) which belong to the genus *Borrelia*. *Borrelia burgdorferi* sensu stricto, which causes Lyme disease, was never identified in the molecular studies of dogs with spirochetemia, thus, this would not be the agent involved. Molecular studies should be performed in samples from this patient to confirm the causative agent. Be it from the *Borrelia* genus, the question arises of which would be the vector, since the ticks involved in other parts of the world have not been reported in dogs in the region. The serology to *E. canis* implies that the dog has been exposed to *R. sanguineus*.