Natural Infection of a Domestic Cat (Felis domesticus) with Leishmania (Viannia) in the Metropolitan Region of Belo Horizonte, State of Minas Gerais, Brazil

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Key words: cat - leishmaniasis - PCR - Leishmania (Viannia)

Cutaneous leishmaniasis (CL) in cats (Felis domesticus) is a rare finding and the first case was described by Mazza (1927, cited by E Brumpt 1936 Précis de Parasitologie), however without identification of the infecting species, as other reports, which include GB Mello (1940 Brasil-Médico 54: 180) who observed a natural infection in a cat in Brazil, and R Bonfante-Garrido et al. (1991 Trans R Soc Trop Med Hyg 85: 53) who described amastigotes in cutaneous smears from three cats in Venezuela. Recently TM Craig et al. (1986 Am J Trop Med Hyg 35: 1100-1102) identified as Leishmania mexicana, the parasite isolated from dermal lesions of a cat from Texas, USA and JC Barnes et al. (1993 JAVMA 202: 416-418) described a case of disseminated cutaneous leishmaniasis by the same species in another cat from Texas. Thus, it is possible that cat infections might be relatively common in some endemic areas for leishmaniasis. Infection of cats by L. (Viannia) has not been previously described.

Since 1987 autoctonous human cases of CL have been demonstrated in Betim, a county with about 144,000 inhabitants in the Metropolitan Region of Belo Horizonte and in the last six years the annual incidence of the disease varied from 0.58 to 5.08/100,000 inhabitants.

In May 1994, we examined a 5 year old female cat with a 6 cm diameter vegetative lesion in the inter digital region of the left posterior paw (Fig). It lived in a 10 year old neighbourhood located in the periurban area of the city.

Rare amastigotes were seen in a Giemsa-stained smear but culturing of a biopsy fragment in NNN-Lit medium was not successful.

In order to identify the infecting Leishmania species of the cat, another biopsy fragment was used to amplify the parasite DNA by the polymerase chain reaction (PCR) (W Degrave et al. 1994 Mem Inst Oswaldo Cruz 89: 463-469). Two oligonucleotide primers [GGG(G/T)AGGGGC GTTCT(G/C)CGAA and (G/C)(G/C)(G/C)(A/C)CTAT(A/T)TTACACAA CCC] directed to amplify the conserved region of minicircle kintoplast DNA of Leishmania strains were used in the amplification reaction. The expected 120 bp product was obtained and further hybridized with cloned radiolabeled minicircles from L. panamensis and L. amazonensis. We concluded that the parasite from the cat was a species of the subgenus Viannia, as the amplified product only hybridized with the L. panamensis minicircle probe.

In Brazil, L. braziliensis is the common cause of cutaneous leishmaniasis of man, and of some domestic animals, such as dogs and donkeys (CML Aguillar et al. 1987 Mem Inst Oswaldo Cruz 82: 143). This report is, to our knowledge, the first proven case of a cat infected by L. (Viannia), most probably L. (V) braziliensis. In our opinion, however, the finding of a cat with cutaneous leishmaniasis does not reflect an important role of these domestic animals in the natural transmission of the disease in this area, and this animal probably represents an accidental host.

PCR provides a fast detection of Leishmania in clinical samples and can substitute axenic culture for parasite detection, thus avoiding population selection, and allows for the use of secondary typing probes to discriminate between the subgenus Viannia and Leishmania and even between species (M Lopez et al. 1993 Am J Trop Med Hyg 49: 348-356). As probe technology has been recognized as very promising for diagnosis of infectious diseases and as a tool with great specificity for the typing of organisms, clinical samples collected from human and animal cases of CL from the Metropolitan Region of Belo Horizonte will be characterized by this method, hopefully leading to a better understanding of the epidemiology of the area.

Acknowledgments: to Dr Yara Traub-Cseko for comments on the manuscript and Dr Johan Thevelein, Katolieke Universiteit te Leuven, for the “Practical Course in Molecular Biology of Microorganisms”.

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Received 7 March 1995
Accepted 18 September 1995
Five year old female cat bearing a 6 cm diameter vegetative lesion on the left posterior paw caused by a dermatropic *Leishmania* (Viannia).