

## RESEARCH NOTE

## 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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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 autochthonous 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)TTACACCAACCCC] directed to amplify the conserved region of minicircle kinetoplast 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.

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Five year old female cat bearing a 6 cm diameter vegetative lesion on the left posterior paw caused by a dermatropic *Leishmania (Viannia)*.