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Presence of *Leishmania infantum* DNA in reproductive organs of domestic cats

Nathalia FA Paula[1], João AF Leonel[1], Diogo T Silva[2], Julia C Benassi [3], Trícia M FS Oliveira[1,3*]

1. Post-Graduate Program in Experimental Epidemiology Applied to Zoonoses at the Faculty of Veterinary Medicine and Animal Science, University of São Paulo, São Paulo, Brazil. 2. Andradina Educational Foundation, Andradina, Brazil. 3. Department of Veterinary Medicine, Faculty of Animal Science and Food Engineering, University of São Paulo, Pirassununga, Brazil.
*tricia@usp.br

Background
Leishmania spp. is a zoonotic protozoan parasite that causes important diseases known as leishmaniases. The blood-feeding of infected female sandflies is the main route of transmission of the parasite to vertebrate hosts. However, vertical, and venereal transmission routes have already been reported in humans [1] and dogs [2]. Recent research has shown that cats are reservoirs of *L. infantum*, and are capable of transmitting the parasite to the competent vector, participating in the parasite's maintenance cycle [3]. Furthermore, considering that *Leishmania* spp. infection has been reported in various cat tissues, it is important to investigate the possibility of vertical and venereal transmission in this species.

Material and Methods
This study verified the presence of *Leishmania* spp. DNA in the reproductive organs of domestic cats from a human visceral leishmaniasis endemic area in Brazil, donated after a neutering campaign. To this end, the testis and epididymis of 34 males and the ovary and uterus of 7 females were evaluated for the presence of *Leishmania* spp. kDNA and for sequencing.

Results
The epididymis and testis of two male cats (A and B) and the ovary and uterus of one female (C) were PCR positive for *Leishmania* spp. kDNA. The PCR-positive *Leishmania* spp. kDNA samples were submitted to the internal transcribed spacer (ITS1) of trypanosomatid rDNA, followed by Sanger sequencing. Sequencing analysis of the ITS1 sequences revealed *L. infantum* DNA in the testis and epididymis of cat A, with 93.03% identity with MN422063.1 and 88.97% with MN422060.1 sequences available on GenBank, respectively. In addition, *L. infantum* DNA in the uterus and ovary of cat C had 92.21% identity with OR073760.1 and 91.43% with MN422063.1 sequences available on GenBank, respectively. The DNA samples from cat B were not sufficient for sequencing.

Conclusion
The reproductive system of male and female cats was evaluated and *Leishmania* spp. DNA was detected. *L. infantum* rDNA was sequenced in the testis, epididymis, ovary, and uterus of male and female cats. This finding reinforces the concern about potential vertical and venereal infections in domestic cats.

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