

Images in Infectious Diseases

Spleen damage in a dog naturally infected by *Leishmania infantum*

José Claudio Carneiro de Freitas^[1], Adam Leal Lima^[1]
and Diana Célia Sousa Nunes-Pinheiro^[1]

[1]. Faculdade de Veterinária, Programa de Pós-Graduação em Ciências Veterinárias, Universidade Estadual do Ceará, Fortaleza, Ceará, Brasil.



FIGURE 1 - Splenomegaly and several nodular formations in naturally infected dog by *Leishmania infantum*.

A two-year-old female mongrel dog was referred to the Zoonosis Control Center in Fortaleza, Brazil for clinical and corporal evaluation. This animal presented with weight loss, skin lesions, onychogryphosis, and splenomegaly. Blood samples were collected for hematological and biochemical evaluation, revealing anemia, lymphocytosis, and hyperproteinemia.

After seroreactivity to *Leishmania infantum* was confirmed by Dual Path Platform (DPP) and Enzyme Linked Immunosorbent Assay (ELISA), the animal was euthanized according to animal welfare recommendations as a disease control measure determined by the Ministry of Health of Brazil. Macroscopic analysis of organs revealed no changes except for splenomegaly and several nodular formations in the spleen (**Figure 1**).

Fragments of these nodules were collected and subjected to histological processing (H&E) for structural and functional evaluation. Capsular thickening and inflammatory infiltrate, including lymphocytes, neutrophils, megakaryocytes, and

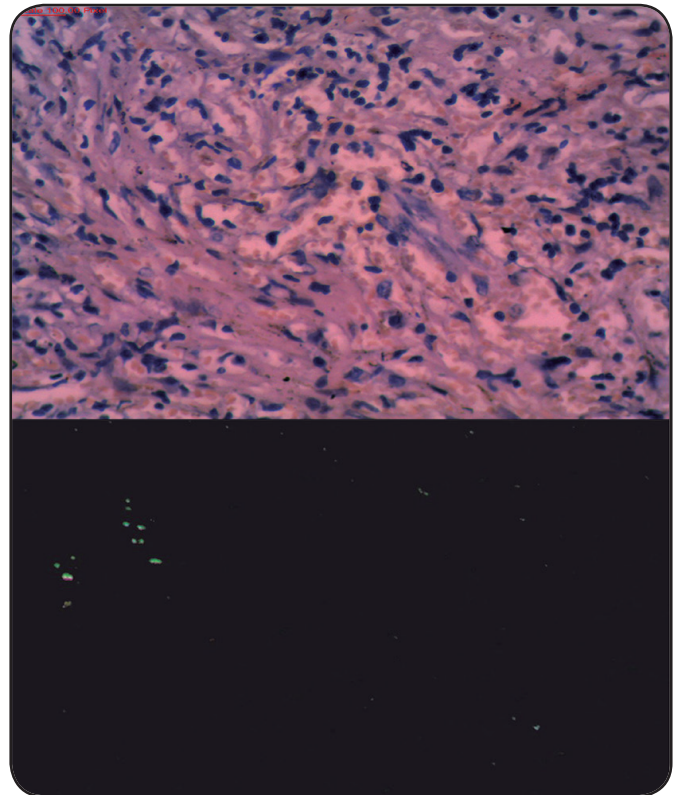


FIGURE 2 - Spleen amyloidosis (Congo red and polarized light microscopy) in naturally infected dog by *Leishmania infantum* (400x).

amyloid deposition, were observed. Amyloidosis was confirmed in a Congo red-stained sample by optical and polarized light microscopy (**Figure 2**). *L. infantum* amastigotes were detected inside the nodules by immunohistochemical analysis (**Figure 3**).

Nodular hyperplasia is a common splenic condition that corresponds to a lesion formed by hyperplastic lymphoid cells or large concentrations of amyloid proteins, erythrocytes, myeloid cells, and megakaryocytic cells¹. These nodules may be associated with chronic and inflammatory processes², such as canine visceral leishmaniasis³, and are more common in older dogs. Nodular hyperplasia can cause hematomas and consequently hemoperitoneum¹.

Corresponding author: Dr. José Claudio Carneiro de Freitas.
e-mail: jose.carneiro@uece.br
Received 9 March 2016
Accepted 12 July 2016

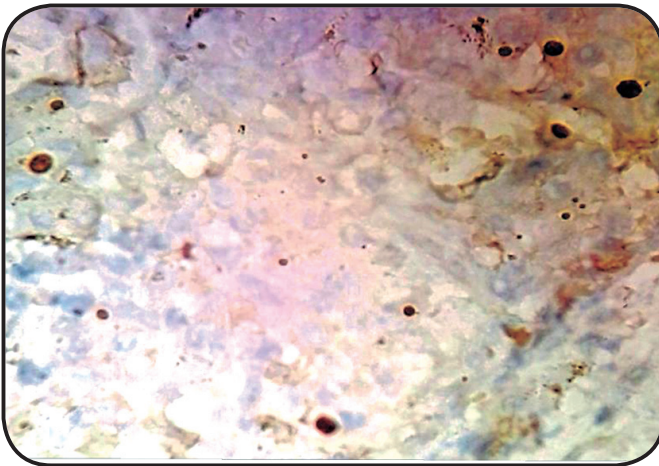


FIGURE 3 - *Leishmania infantum* amastigotes detected inside the nodules by immunohistochemical analysis in spleen of naturally infected dog (400x).

Thus, we conclude that splenic nodular hyperplasia and amyloidosis are alterations related to the presence of *L. infantum* in the spleen. These observations characterized the chronic inflammatory process observed in this case.

Acknowledgments

We offer our deepest thanks to the Zoonosis Control Center of Fortaleza for technical support of the development and implementation of this study.

Financial support

Fundação Cearense de Apoio ao Desenvolvimento Científico e Tecnológico (FUNCAP)/Coordenação de Aperfeiçoamento de Pessoal de Ensino Superior (CAPES): Project Number PNP-0058-00014.01.01/11.

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