

ANIMAL ABUSE IN DOGS: LEGAL IMPLICATIONS AND PUBLIC HEALTH REPERCUSSIONS – CASE REPORT**MAUS-TRATOS EM CÃES: IMPLICAÇÕES LEGAIS E REPERCUSSÕES EM SAÚDE PÚBLICA – RELATO DE CASO****MALTRATO EN PERROS: IMPLICACIONES LEGALES Y REPERCUSIONES EN SALUD PÚBLICA – INFORME DE CASO**Mayara Alves Simões¹, Marianna Vaz Rodrigues²

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ABSTRACT

Animal abuse constitutes an environmental crime in Brazil and represents a significant ethical and public health concern, particularly when associated with zoonoses of collective impact, such as canine visceral leishmaniasis (CVL), caused by *Leishmania infantum*. This study reports the case of a female dog rescued after a complaint of abandonment, presenting cachexia, apathy, alopecia, and diffuse dermatitis. Initially, laboratory tests were inconclusive; however, after confirmation that the animal originated from an endemic area, serological (IFAT) and molecular (PCR) tests confirmed the diagnosis of CVL. The patient developed hepatic and renal impairment and was treated with miltefosine and allopurinol, along with supportive therapies. Despite temporary clinical stabilization, the condition progressed to renal failure and clinical deterioration, ultimately resulting in death. From a legal standpoint, the case falls under Brazilian legislation that classifies animal abuse as a crime, with criminal and administrative penalties. From a public health perspective, infected dogs act as urban reservoirs of the disease, contributing to the maintenance of the transmission cycle in endemic areas. It is concluded that animal abuse associated with zoonoses extends beyond animal welfare, constituting a collective health issue that requires an interdisciplinary approach and the strengthening of public policies for disease control and responsible ownership.

KEYWORDS: Visceral Leishmaniasis; Dogs; Animal Welfare; Zoonoses.**RESUMO**

Os maus-tratos contra animais configuram crime ambiental no Brasil e representam relevante problema ético e sanitário, especialmente quando associados a zoonoses de impacto coletivo, como a leishmaniose visceral canina (LVC), causada por Leishmania infantum. Este estudo relata o caso de uma cadela resgatada após denúncia de abandono, apresentando caquexia, apatia, alopecia e dermatite difusa. Inicialmente, os exames laboratoriais foram inconclusivos; contudo, após confirmação de que o animal era proveniente de área endêmica, exames sorológicos (RIFI) e moleculares (PCR) confirmaram o diagnóstico de LVC. A paciente evoluiu

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com comprometimento hepático e renal, sendo instituído tratamento com miltefosina e alopurinol, associado a terapias de suporte. Apesar de estabilização clínica temporária, houve progressão para insuficiência renal e agravamento do quadro, culminando em óbito. Do ponto de vista jurídico, o caso enquadra-se na legislação brasileira que tipifica maus-tratos como crime, com previsão de sanções penais e administrativas. Sob a perspectiva da saúde pública, destaca-se que cães infectados atuam como reservatórios urbanos da doença, contribuindo para a manutenção do ciclo de transmissão em áreas endêmicas. Conclui-se que maus-tratos associados a zoonoses extrapolam o bem-estar animal, configurando problema de saúde coletiva que demanda abordagem interdisciplinar e fortalecimento de políticas públicas de controle e guarda responsável.

PALAVRAS-CHAVE: Leishmaniose Visceral; Cães; Bem-Estar do Animal; Zoonoses.

RESUMEN

*El maltrato animal constituye un delito ambiental en Brasil y representa un relevante problema ético y de salud pública, especialmente cuando se asocia a zoonosis de impacto colectivo, como la leishmaniasis visceral canina (LVC), causada por *Leishmania infantum*. Este estudio describe el caso de una perra rescatada tras denuncia de abandono, que presentaba caquexia, apatía, alopecia y dermatitis difusa. Inicialmente, los exámenes de laboratorio fueron inconclusos; sin embargo, tras confirmarse que el animal procedía de una zona endémica, pruebas serológicas (RIFI) y moleculares (PCR) confirmaron el diagnóstico de LVC. La paciente evolucionó con compromiso hepático y renal, instaurándose tratamiento con miltefosina y alopurinol, asociado a terapias de soporte. A pesar de una estabilización clínica temporal, hubo progresión a insuficiencia renal y agravamiento del cuadro, culminando en óbito. Desde el punto de vista jurídico, el caso se encuadra en la legislación brasileña que tipifica el maltrato animal como delito, con sanciones penales y administrativas. Desde la perspectiva de la salud pública, se destaca que los perros infectados actúan como reservorios urbanos de la enfermedad, contribuyendo al mantenimiento del ciclo de transmisión en áreas endémicas. Se concluye que el maltrato asociado a zoonosis trasciende el bienestar animal y constituye un problema de salud colectiva que requiere un abordaje interdisciplinario y el fortalecimiento de políticas públicas de control y tenencia responsable.*

PALABRAS CLAVE: Leishmaniasis Visceral; Perros; Bienestar del Animal; Zoonosis.

INTRODUCTION

Animal maltreatment represents an ethical, social, familial, and legal issue of great relevance, as it constitutes a crime under Brazilian legislation, established by Law No. 9,605/1998 and amended by Law No. 14,064/2020 (BRAZIL, 1998; BRAZIL, 2020). In addition to causing suffering and compromising animal welfare, such practices have direct implications for public health, since neglected animals may become reservoirs and transmitters of important zoonotic diseases (WHO, 2010; BRAZIL, 2014).

Among these diseases, canine visceral leishmaniasis (CVL) stands out as a chronic and severe condition transmitted by the vector *Lutzomyia longipalpis* (sand fly), capable of infecting humans and posing an epidemiological risk in endemic areas (BRAZIL, 2014; MAZZINGHY et al., 2021). In Brazil, this protozoan has been detected in animals from the interior of the state of São

Paulo, particularly in the Central-West region of the state, which includes the municipality of Botucatu.

In the clinical context, canine leishmaniasis presents with nonspecific signs, including progressive weight loss, dermatological alterations, apathy, vomiting, and ocular manifestations, in addition to hematological and biochemical changes that may impair hepatic and renal function, leading to a guarded prognosis (MAZZINGHY et al., 2021; BRASIL, 2014). Diagnosis can be challenging, involving serological tests, molecular assays, and tissue cytology, as inconclusive or discrepant results are relatively common, hindering effective disease control.

The present report describes the case of Mel, a female dog rescued in January 2021 by a group of independent animal protectors following a report of abuse and abandonment. The patient exhibited clinical signs consistent with malnutrition and mistreatment and was subsequently diagnosed with canine visceral leishmaniasis, with eventual death. This case highlights the importance of early diagnosis, appropriate clinical management, and increased awareness of the impact of animal abuse on dogs, not only in terms of animal health but also regarding its legal implications and, importantly, its relevance to public health, considering the zoonotic transmission potential of this disease.

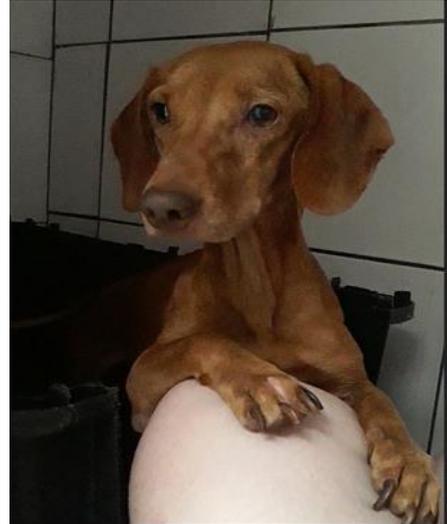
CASE REPORT

The patient, Mel, a mixed-breed female dog with a light brown (“caramel”) coat, was rescued on January 14, 2021, by a group of independent animal protectors. The report referred to a dachshund-type dog presenting signs of severe emaciation, apathy, and coat discoloration; she was not spayed, which may have resulted in multiparity.

At the time of Mel's rescue, in the municipality where the case occurred (Botucatu, São Paulo, Brazil), there was limited public awareness and insufficient enforcement of penalties against those responsible for animal abuse. In addition, there was no consolidated institutional framework for the management and support of such cases, nor formal mechanisms to assist animal protectors in extreme situations. Consequently, rescues were often carried out using personal resources, placing substantial financial and emotional burdens on the volunteers involved. On the day of rescue, in January 2021, Mel presented with a cachectic body condition score (Figure 1), apathy, alopecia in the cervical region, tail, and periocular area (Figure 2), as well as diffuse dermatitis.

Figure 1: Cachectic body score

Figure 2: Alopecia in the neck, tail, and around the eyes.



Source: authors' personal archive, 2021

The animal protectors from this independent rescue group have consistently worked under veterinary supervision, and, as part of their routine following animal rescue, a complete blood count was performed (Figures 3 and 4) to assess her clinical condition. Based on the hematological findings and clinical evaluation, the initial management consisted of providing a balanced diet for a few days, bathing with a dermatological shampoo, and monitoring clinical progression.

Figure 3 A and B: Blood count

HEMOGRAMA COMPLETO		
SEROTIPIPOGRAMA		
HEMATOCRITO.....	21.7	%
HEMOGLOBINA.....	8.4	g/dl
HEMACIAS.....	3.68	ml/100ml
H ₂ O ₂	22.8	ps
V ₂ C ₂ H.....	39.0	ul
C ₂ H ₂ C ₂ H.....	38.7	%
ERITROBLASTOS.....	00	/100
proteína plasmática(PPV).....	6.8	g/dl
A observacoes.....	NICROCIPOSE *	

LEUCOGRAMA		
Leucocitos Totais.....	3.100	/mm ³
Mielocitos.....	00	0
Metamielocitos.....	00	0
Bastonetes.....	00	0
Segmentados.....	79	2449
Eosinofilos.....	03	93
Linfocitos Tipicos.....	14	434
Monocitos.....	04	124
Basofilos.....	00	0
PLAQUETAS.....	206.000	/mm ³
Observacoes.....	Nao foram observadas alteracoes morfológicas nos leucócitos.	

Source: authors' personal archive, 2021

Despite a balanced and natural diet, Mel did not initially show clinical improvement, remaining apathetic and with persistent alopecia in certain areas of the body. Fifteen days after rescue, she developed recurrent vomiting, and repeat laboratory tests (complete blood count and biochemical profile) were performed, revealing elevated hepatic enzyme levels and increased urea concentrations.

In light of the emergence of new clinical signs and subsequent laboratory findings, two main diagnostic hypotheses were considered: hemoparasitosis caused by *Babesia* spp. and canine

visceral leishmaniasis. At the time, given that the patient originated from a municipality not yet formally recognized as an endemic area for leishmaniasis, the initial suspicion focused on babesiosis due to the compatibility of the observed hematological parameters. Therefore, complementary tests were performed both to investigate hemoparasitosis and to rule out leishmaniasis.

Thus, samples were collected for the diagnostic investigation of hemoparasitosis caused by *Babesia* spp. and canine visceral leishmaniasis. To elucidate the diagnostic hypotheses, a complete blood count (Figure 4A and 4B), PCR for *Babesia* spp. (Figure 5), and cytological examination (Figure 6) were performed using samples obtained from lymph nodes and ocular secretions.

Figure 4 A and B: Blood count

HEMOGRAMA COMPLETO			LEUCOGRAMA		
ERITROGRAMA					
HEMATÓCRITO.....	20,8	%	Leucócitos Totais.....	4.700	/ul
HEMOGLOBINA.....	7,7	g/dl	Mielócitos.....	00	0
HEMACIAS.....	3,36	mlh/ul	Metamielócitos.....	00	0
H.C.M.....	22,9	pg	Bastonetes.....	00	0
V.C.M.....	63,9	fl	Segmentados.....	77	3619
C.H.C.M.....	37,0	%	Eosinófilos.....	00	0
Eritróblastos.....	1	/100	Linfócitos Típicos.....	19	893
Proteína plasmática(PPT):	7,6	g/dl	Monócitos.....	04	188
Observações.....	ANISOCITOSE *		Basófilos.....	00	0
			PLAQUETAS.....	226.000	/ul
			observações.....	PRESENCIA DE GRUPOS PLAQUETARIOS	

Source: authors' personal archive, 2021

Figure 5: PCR for *Babesia* spp.

RESULTADO DO EXAME			
Dados do Animal			
Nome: Mel	RG:		
Especie: Canina	Raça: Srd		
Sexo: Fêmea	Idade: 5 an		
Data coleta: 17/02/2021	Proprietário: Arca		
Requisitante			
Nome: Eliane Lenita Milrodt	CRMV: 44330 SP / SP		
1 amostra recebida			
Sangue total em EDTA			
1 exame solicitado			
Nome	Identificação	Tipo análise	Resultado
<i>Babesia</i> spp.	BAB	Real time PCR (qPCR)	Negativo
Chave Validação:	053561cf380b1f032c7742a6964272581653160d318338f51e2040868520efe3		

Botucatu, 17 de Fevereiro de 2021.

Source: authors' personal archive, 2021

Figure 6: Cytological examination for leishmaniasis

Nome do animal: Mel
 Espécie: Canina Raça: SRD Sexo: Fêmeas Idade: Adulto

Material enviado para exame: Citologia de linfonodo e secreção ocular.
 Data de recebimento das amostras: 27/02/2021
 Número de Lâminas: 06 Colorações empregadas: Panótico

Histórico clínico: Pesquisa de Leishmaniose. Punção de linfonodo e secreção ocular.
 Suspeita Clínica: Leishmaniose.

Descrição microscópica:
 1 – (Linfonodo): Foram coradas 03 (três) lâminas citológicas pelo Panótico com material adequado, preservado e representativo para o diagnóstico. Ao exame citológico, observa-se celularidade moderada composta predominantemente por linfócitos bem diferenciados ora discretamente restritos e discretos plasmócitos bem diferenciados. Nota-se ainda quantidade discreta de neutrófilos não degenerados e raros macrófagos restritos. Fundo de lâmina é composto por eritrócitos, células degeneradas, debris celular e material proteináceo. **Negativo para Leishmaniose na presente amostra.**

2 – (Secreção Ocular): Foram coradas 03 (três) lâminas citológicas pelo Panótico, com material adequado, preservado e representativo para o diagnóstico. Ao exame citológico, observa-se celularidade alta composta por quantidade acentuada de células queratinizadas nucleadas dispostas de forma isoladas, agrupadas e por vezes sobrepostas. Nota-se discreta de células queratinizadas nucleadas com características típicas (citoplasma moderado a amplo e núcleo homogêneo), além de células degeneradas e debris celular, assim como quantidade moderada de material amorfo basofílico e quantidade discreta de *Molozentis* spp. Observa-se ainda quantidade discreta de neutrófilos degenerados e não degenerados, além de macrófagos restritos. Fundo de lâmina é composto por material proteináceo e fibras nucleares. **Negativo para Leishmaniose na presente amostra.**

Source: authors' personal archive, 2021

As both tests yielded negative results for the two initially considered diagnoses (including PCR for Babesia), a new test was performed after obtaining the information that Mel had been rescued in the municipality of Lençóis Paulista, São Paulo, a region recognized as endemic for *leishmaniasis*.

Subsequently, an Indirect Immunofluorescence Assay (IFA) (Figure 7) was performed, which revealed a titer of 1:320, interpreted as a possible positive result for *leishmaniasis*. In light of this finding, the veterinarian responsible for the case proceeded with formal notification to the Regional Council of Veterinary Medicine (CRMV).

Figure 7: Indirect Immunofluorescence Assay (IFA)

RESULTADO DO EXAME PARA LEISHMANIOSE		
RG-HV: Particular	RG-LDZ: 9521	Data de entrada no LDZ: 15/02/21
Nome/Nº: Mel	Sexo: Fêmeas	Procedência: Botucatu
Idade: Não informado	Raça: SRD	Espécie: Canina
Resultado Serológico de Imunofluorescência Indireta (RIFI):		320

Source: authors' personal archive, 2021

Supportive therapies were instituted, including intramuscular ceftriaxone, oral allopurinol, oral Leucogen®, oral Hemolitan®, oral ondansetron, oral omeprazole, and oral sucralfate, in addition to the placement of a Frontmax® repellent collar.

Despite the implementation of supportive therapeutic protocols, the patient did not show satisfactory clinical improvement. In March 2021, a worsening of the clinical condition was observed, characterized by apathy, episodes of vomiting, and the development of ocular lesions.

Given the lack of adequate clinical response, the veterinarian responsible for the case, in conjunction with the animal protectors, opted to perform additional complementary tests in order to clarify the diagnosis and establish a specific therapeutic approach.

On ultrasonographic examination, performed in March 2021, renal glomerular involvement was identified. On the same date, biological samples were collected for real-time PCR testing for leishmaniasis, the results of which confirmed the diagnosis of the disease.

Following diagnostic confirmation, a specific therapeutic protocol for leishmaniasis was instituted, consisting of oral miltefosine (Milteforan®) and allopurinol, in association with the previously described supportive therapies. After initiation of treatment, the patient remained clinically stable for several months under care in a temporary home. However, she presented recurrent episodes of vomiting and hyporexia, and periodic hematological monitoring was performed to assess renal function. Due to progression to renal insufficiency, daily subcutaneous fluid therapy was instituted as a supportive measure.

Despite the implementation of specific treatment with miltefosine, combined with supportive therapies, the patient's clinical condition worsened. Persistent vomiting for two consecutive days, anorexia, and the development of multiple extensive oral ulcers were observed, which significantly compromised food intake and adequate hydration.

A few days after the onset of ulcerative lesions, accompanied by bleeding, the patient was admitted for hospitalization. However, no favorable clinical response was observed, ultimately resulting in death in November 2021.

DISCUSSION

LEGAL IMPLICATIONS OF ANIMAL MISTREATMENT

Within the Brazilian legal framework, animal mistreatment constitutes an environmental crime, as established by Article 32 of Law No. 9,605/1998 (BRASIL, 1998), which defines as a criminal offense the act of abuse, mistreatment, injury, or mutilation of animals.

Subsequently, Law No. 14,064/2020 (BRASIL, 2020), known as the "Sansão Law," amended this legal provision by increasing penalties when the offense involves dogs or cats. With this modification, the sanction now includes imprisonment from two to five years, a fine, and prohibition of animal ownership, reinforcing the punitive and educational nature of the legislation (BRASIL, 2020).

At the municipal level, Law No. 6,315/2022 of the municipality of Botucatu (BOTUCATU, 2022) should be highlighted. Article 5 of this law defines the conduct considered as mistreatment of domestic animals and establishes the legal implications provided for in Article 60, item II; Article 68; and Article 73, § 4 (BOTUCATU, 2022), thereby consolidating local regulatory action in alignment with federal legislation.

Within the scope of Botucatu's municipal legislation, there is also a specific regulatory provision regarding the responsibility of animal guardians for the surgical sterilization of dogs and cats. Law No. 6,315/2022 establishes, in its Article 12, that every owner is responsible for the neutering of their animals, allowing, in cases of proven financial hardship, the request for the procedure through public authorities, via the Environmental Health Surveillance service.

Com a alteração promovida pela Lei nº 6.556/2023, o §1º do referido artigo passou a determinar que proprietários sem registro formal como criadores ficam obrigados a providenciar a esterilização. O §2º, por sua vez, ressalva apenas os casos em que houver contraindicação expressa por laudo médico-veterinário, mantendo-se, ainda assim, vedada a reprodução de cães e gatos cujos tutores não possuam registro de criador. Tais dispositivos evidenciam o compromisso do município com o controle populacional e com a prevenção do abandono e de situações de vulnerabilidade animal.

Additionally, the municipality has an Animal Protection Department (DPA), which is responsible for investigating reports of animal mistreatment, in coordination with the Animal Protection Police Electronic Station (DEPA), a specialized structure dedicated to the registration and processing of such occurrences.

In light of this normative and institutional framework, the situation described in the present case report suggests the occurrence of conduct subject to legal accountability, particularly with regard to abandonment, deprivation of basic care, and noncompliance with the legal obligation of sterilization. Beyond criminal implications, the legislation also provides for the application of administrative sanctions by municipal and state authorities, including fines and other applicable measures, according to the severity of the offense.

PUBLIC HEALTH AND LEISHMANIASIS

Visceral leishmaniasis (VL) is a zoonosis of significant public health importance and is considered endemic in several regions of Brazil. In the state of São Paulo, inland municipalities such as Bauru, Lençóis Paulista, São Manuel, and Botucatu have reported sustained occurrence

of the disease, with circulation of the parasite in urban environments (BRASIL, 2014; SÃO PAULO, 2023).

In urban areas, dogs are recognized as the main domestic reservoirs of *Leishmania infantum*, playing a central role in maintaining the transmission cycle (DANTAS-TORRES, 2007; BRASIL, 2014). Canine infection may present a variable clinical course, including prolonged asymptomatic periods. In such cases, even in the absence of evident clinical manifestations or in the presence of initially non-reactive laboratory results, animals may remain infected and potentially infectious to the phlebotomine vector. This condition increases the risk of disease spread among dogs and, consequently, to the human population.

Factors such as abandonment, lack of regular veterinary care, and situations of mistreatment contribute to the persistence of infected animals without proper diagnosis or treatment, thereby favoring the maintenance of the epidemiological chain. Moreover, urban environments characterized by the accumulation of organic matter, inadequate sanitary conditions, and weaknesses in educational and surveillance actions constitute favorable scenarios for vector proliferation, reinforcing the complexity of controlling visceral leishmaniasis (BRASIL, 2014).

Visceral leishmaniasis remains a priority condition among neglected tropical diseases, presenting high lethality when not diagnosed and treated in a timely manner. In Brazil, the progressive urbanization of the disease has modified its epidemiological profile over recent decades, increasing the occurrence of human cases in urban and peri-urban areas—a phenomenon associated with vector adaptation to the domestic environment and the presence of infected canine reservoirs (BRASIL, 2014; WHO, 2023). This scenario poses additional challenges to traditional control strategies, requiring intersectoral actions that integrate epidemiological surveillance, vector control, early diagnosis, and appropriate management of reservoirs.

From a public health perspective, visceral leishmaniasis is strongly associated with social determinants such as inadequate housing conditions, insufficient sanitation, and socioeconomic inequalities, which favor the maintenance of the transmission cycle (WHO, 2023). Therefore, addressing the disease requires a comprehensive approach aligned with the One Health concept, considering the interface between human, animal, and environmental health. The implementation of continuous public policies, combined with community education and the strengthening of primary health care, constitutes a key element in reducing morbidity and mortality and interrupting the transmission chain in endemic areas.

In this context, clinical reports such as Mel's case highlight the importance of integrated strategies that combine epidemiological surveillance, health education, and the promotion of

responsible pet ownership. Raising awareness among animal guardians regarding the sanitary and legal implications associated with mistreatment and neglect, including the administrative and criminal sanctions established under Brazilian legislation is essential not only from an animal welfare perspective but also for the protection of public health.

CONSIDERATIONS

Mel's case allows us to conclude that situations of negligence and animal mistreatment extend beyond individual suffering, encompassing legal, ethical, and public health implications, particularly when associated with zoonoses of epidemiological relevance such as visceral leishmaniasis. The lack of early veterinary care, combined with the animal's presence in an endemic area without timely diagnosis, highlights weaknesses in guardian accountability and in the consolidation of effective responsible ownership practices.

The findings reinforce that canine visceral leishmaniasis, in addition to being a severe and potentially fatal disease, is part of the urban transmission dynamics of the infection, maintaining a close interface with human health. In this context, the presence of infected animals without proper monitoring represents a risk to collective health, requiring coordinated actions involving surveillance, early diagnosis, and vector control.

It is therefore concluded that addressing this issue requires an integrated approach, combining the rigorous enforcement of animal protection legislation, the strengthening of public policies aimed at zoonosis control, and the expansion of health education strategies. Episodes of mistreatment and neglect, such as the one described, are not limited to individual animal suffering but constitute a public health concern that demands shared responsibility among animal guardians, health professionals, policymakers, and society, in accordance with the principles of One Health and the legal protection of animals.

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