

Case (without diagnosis)

## **A DOG WITH A GASTRIC FOREIGN BODY AND LEISHMANIASIS**

Sara Meazzi<sup>1</sup>, Riccardo Ferriani<sup>2</sup>, Davide Verde<sup>2</sup>, Silvia Rossi<sup>2</sup>, Federico Barbè<sup>2</sup>

<sup>1</sup>*Department of Veterinary Medicine, University of Milan, Milan, Italy*

<sup>2</sup>*San Francesco Veterinary Hospital, Milan, Italy*

### **Signalment**

An 8-year-old male, English setter, dog.

### **History and clinical findings**

The dog was referred to the San Francesco Veterinary Hospital in Milan, to perform an ultrasonography for a suspicious gastric foreign body, detected by rx.

He was adopted from Calabria (Southern Italy) and, from then, he was vaccinated and treated for both endo and ectoparasites with imidacloprid+permethrin-based product (Advantix® spot on). Before the presentation, he was already diagnosed with canine leishmaniasis (antibody titer 1:160) and he was treated with miltefosine and allopurinol (the latter one was ongoing at the moment of the referral).

He had an history of lethargy and dysorexia, with intermittent hyperthermia from three days before the admittance. At the admission, the general health status was good but confirmed the hyperthermia (39.7°C) and the lethargy.

### **Diagnostic procedures**

Due to the aspecific signs and clinical findings, several analyses were performed in order to better investigate the cause for this illness. Since the dog was referred for a foreign body suspicion, an abdomen ultrasonography was performed. Biochemical analyses with BT1500vet (Futurlab, Limena, Padua, Italy) and complete blood count (CBC) using ProCyté DX Hematology Analyzer (IDEXX Laboratories Italia s.r.l., Milan, Italy) were performed at the admission. Moreover, since the dog was already diagnosed with leishmaniasis, in the following days, urinalysis, *Leishmania* antibody titer with IFAT and serum protein electrophoresis were performed. Due to CBC results and the geographical area in which the dog lives (Lombardy, a region where different tick species are present), a rapid immunochromatographic test for vector-borne diseases (SNAP® 4DX® Test, IDEXX Laboratories Italia, Milan, Italy) and a coagulation profile (ACL7000, Instrumentation Laboratory, Munich, Germany) were performed.

Ultrasonography confirmed the presence of a gastric foreign body associated with signs of gastritis (probably due to a mechanic damage). Moreover, there was splenomegaly, abdominal lymph nodes enlargement and signs of chronic nephropathy.

Biochemistry was unremarkable except for a mild hypoalbuminemia and hyperglobulinemia, increased C-reactive protein (CRP) and slightly increased amylase (**TABLE 1**).

**TABLE 1.** Biochemical results (BT1500vet, Futurlab, Limena, Padua, Italy)

\* = Abnormal results

ALT (U/L)	25	15-78
AST (U/L)	42	10-44
ALP (U/L)	77	16-119
$\gamma$ GT (U/L)	3	0.0-11
Amylase (U/L)	<b>2035*</b>	338-1800
Lipase (U/L)	124	20-160
LDH (U/L)	78	45-233
CK (U/L)	121	40-150
Total Bilirubin (mg/dL)	0.17	0.0-0.45
Cholesterol (mg/dL)	234	156-369
Triglycerides (mg/dL)	85	30-112
Glucose (mg/dL)	91	74-120
Total Protein (g/dL)	6.5	5.7-8.0
Albumin (g/dL)	<b>1.7 *</b>	2.8-4.0
Globulin (g/dL)	<b>4.8 *</b>	2.4-4.5
A/G	<b>0.35 *</b>	0.5-1.3
Creatinine (mg/dL)	0.96	0.5-1.8
Urea (mg/dL)	27	15-50
Calcium (mg/dL)	10.3	7.3-11.3
Phosphorus (mg/dL)	4.1	2.6-6.2
Na <sup>+</sup> (mmol/L)	146	140-154
K <sup>+</sup> (mmol/L)	4.3	3.8-5.6
Cl <sup>-</sup> (mmol/L)	117	102-117
CRP (mg/dL)	<b>3.51 *</b>	0.00-1.07

Complete blood count revealed a severe thrombocytopenia, mild normocytic normochromic anemia, leukopenia with neutropenia and mild monocytosis and eosinopenia (**TABLE 2**).

**TABLE 2.** Hematological results (Procyte DX, IDEXX Laboratories Italia, Milan, Italy)

\* = Abnormal results

RBC ( $10^{12}$ /L)	<b>5.08 *</b>	5.65 - 8.87
HCT (%)	<b>31.9 *</b>	37.3 - 61.7
HGB (g/dL)	<b>11.4 *</b>	13.1 - 20.5
MCV (fL)	62.8	61.6 - 73.5
MCH (pg)	22.4	21.2 - 25.9
MCHC (g/dL)	35.7	32.0 - 37.9
RDW (%)	15.5	13.6 - 21.7
%RETIC	0.2	
RETIC ( $10^9$ /L)	12.2	10.0 - 110.0
WBC ( $10^9$ /L)	<b>4.43 *</b>	5.05 - 16.76
%NEUTROPHILS	44.9	
%LYMPHOCYTES	27.1	
%MONOCYTES	26.4	

%EOSINOPHILS	0.9	
%BASOPHILS	0.7	
NEUTROPHILS (10 <sup>9</sup> /L)	<b>1.99 *</b>	2.95 - 11.64
LYMPHOCYTES (10 <sup>9</sup> /L)	1.20	1.05 - 5.10
MONOCYTES (10 <sup>9</sup> /L)	<b>1.17 *</b>	0.16 - 1.12
EOSINOPHILS (10 <sup>9</sup> /L)	<b>0.04 *</b>	0.06 - 1.23
BASOPHILS (10 <sup>9</sup> /L)	0.03	0.00 - 0.10
PLT (10 <sup>9</sup> /L)	<b>21 *</b>	148 - 484

Urinalysis performed by cystocentesis underlined a frank proteinuria (**TABLE 3**) and the presence of granular casts.

**TABLE 3.** Urinalysis results. Urine collected by cystocentesis  
In bold the abnormal results

<b>PHYSICAL – CHEMICAL EXAMINATION (dipstick)</b>		
Visual examination:		golden yellow, turbid
USG:	1032	1015 - 1045
pH:	7	5,5 - 7,5
Protein:	<b>+++</b>	negative/+
Glucose:	negative	negative
Ketones:	negative	negative
Blood:	<b>++</b>	negative
Bilirubin:	negative	negative/+
UP/UC:	<b>2.6</b>	< 0,5
<b>MICROSCOPIC SEDIMENT EXAMINATION</b>		
Leukocytes:	absent	<5/HPF
Erythrocytes:	absent	<5/HPF
Casts:	<b>granular ++</b>	absent - rare
Crystals:	absent	absent
Epithelial cells:	<b>+</b>	rare
Bacteria:	absent	absent

*Leishmania* antibody titer evaluated with IFAT was 1:1280 (negative until 1:80) and it was increased with respect of the previous one.

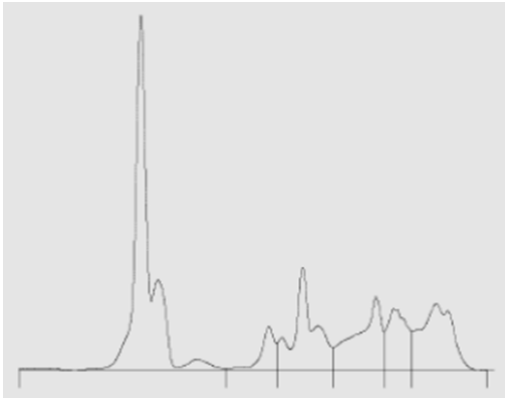
The capillary serum protein electrophoresis, performed with Minicap Sebia (Sebia Italia s.r.l., Bagno a Ripoli, Florence, Italy) showed a mild decrease of albumin, a slight increase of alpha 1 and beta 1 fraction and a decrease of the albumin/globulin ratio (**FIGURE 1**).

**FIGURE 1.** Capillary zone electrophoresis of the serum proteins (Minicap Sebia, Sebia Italia s.r.l., Bagno a Ripoli, Florence, Italy)

\* = Abnormal results

Total Protein (g/dl) **5.60\*** (5.70 - 7.70)

A/G **0.69\*** (0.80 - 1.90)



Albumin %	40.80	44.40 - 65.70	Albumin (g/dL)	<b>2.28*</b>	2.40 - 4.90
Alpha total %	20.50	9.30 - 24.00	Alpha total (g/dL)	0.26	
Alpha 1 %	4.60	2.00 - 7.30	Alpha 1 (g/dL)	<b>0.89*</b>	0.17 - 0.40
Alpha 2 %	15.90	6.20 - 16.70	Alpha 2 (g/dL)	0.76	0.40 - 1.00
Beta total %	22.90	9.20 - 31.80	Beta total (g/dL)	0.53	
Beta 1 %	13.50	2.90 - 11.10	Beta 1 (g/dL)	<b>1.15*</b>	0.10 - 0.80
Beta 2 %	9.40	6.30 - 20.70	Beta 2 (g/dL)	1.28	0.40 - 1.60
Gamma %	15.80	4.50 - 20.10	Gamma (g/dL)	0.88	0.20 - 1.20

A rapid immunochromatographic assay (SNAP® 4DX® Test, IDEXX Laboratories Italia, Milan, Italy) for the detection of vector-borne diseases was also performed and resulted negative for all the tested pathogens (*Ehrlichia spp.*, *Anaplasma spp.*, *Borrelia burgdorferi* and *Dirofilaria immitis*).

The coagulation profile (ACL7000, Instrumentation Laboratory, Munich, Germany) showed a slight increase of aPTT (**TABLE 4**)

**TABLE 4.** Coagulation results.

\* = Abnormal results

aPTT (sec.):	<b>13,1 *</b>	8,6 - 12,8
PT (sec.)	8,1	5,8 9,5
FDP's (µg/mL)	<2,5	0 - 2,5
D-Dimer	0,4	0,01 - 0,50
Fibrinogen (mg/dL)	305	100 - 400

Antithrombin III (%)	110	100 - 150
----------------------	-----	-----------

**What is your opinion about this case?**

**Is the foreign body causing all the clinical signs?**

**Is it *Leishmania* responsible for them?**

**Do we need some more information about the diagnostic procedures?**