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CLINICAL CASE

# Unusual clinical presentation of leptospirosis in a cat☆

## Présentation clinique originale d'une leptospirose chez un chat

**C. Beaudu-Lange*, E. Lange**

*Clinique vétérinaire de la Pierre-Bleue, 1, rue de la Prairie, 35550 Pipriac, France*

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**KEYWORDS**
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Glomerulonephritis;
Azotemia;
Cat

**Summary** A sterilised 4-year-old cat, living in contact with hunting dogs, was presented following several days of vomiting and diarrhea. In a state of shock, she was hyperesthetic and handling was painful. She had marked inflammatory lesions on her pinnas, abdominal skin and foot digits. Proteinuria was elevated without significant sediment. Blood analysis revealed pre-renal azotemia, and hyperglobulinemia. An abdominal ultrasound examination showed nephromegaly and an echomodified pancreas (snap fPL test negative). A search for anti-nuclear factors was negative. PCR blood analyses were slightly positive for *Leptospira* spp. and negative for *Ehrlichia* spp. and *Anaplasma* spp. A treatment based on cefovecin and methylprednisolone (5 days) then 14 days afterwards, doxycycline (4 weeks) was prescribed. The cat recovered completely. A double serology test, carried out at 5 weeks' interval, showed a significant seroconversion for Leptospira serogroup Sejroë serovar Saxkoebing (snap FeLV/FIV combo test negative). This case shows that cats can develop clinical leptospirosis without an apparent cause of immunosuppression, with symptoms partly comparable to those of the canine subacute form, and particularities. The Sejroë serogroup will therefore have to be included in the future in serological testing if there is a clinical suspicion of leptospirosis in cats.


☆ Crédits de formation continue. — La lecture de cet article ouvre droit à 0,05 CFC. La déclaration de lecture, individuelle et volontaire, est à effectuer auprès du CNVFCC (cf. sommaire).

* Corresponding author.
*E-mail address:* beaudu.lange@gmail.com (C. Beaudu-Lange).

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**MOTS CLÉS**
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Vasculite ;
Glomérulonéphrite ;
Insuffisance rénale

**Résumé** Une chatte stérilisée de 4 ans, en contact avec des chiens de chasse, est présentée pour vomissements et diarrhée depuis quelques jours, en état de choc, hyperesthésique et douloureuse à toute manipulation, avec des lésions inflammatoires marquées du pavillon des oreilles, de la peau de l'abdomen et des doigts. Les analyses révèlent une protéinurie importante sans culot significatif, une azotémie prérénale et une hyperglobulinémie. L'échographie abdominale montre une néphromégalie et un pancréas d'échodensité modifiée (test snap fPL négatif). Le dosage des facteurs antinucléaires est négatif et les analyses PCR sur sang faiblement positives pour *Leptospira* spp. (négatives pour *Ehrlichia* spp. et *Anaplasma* spp.). Un traitement à base de céfovécine et méthylprednisolone (5 jours) puis 14, après, de doxycycline (4 semaines) est prescrit. La chatte récupère complètement. Une sérologie double, à 5 semaines d'intervalle, montre une séroconversion significative pour Leptospira sérogroupe Sejroë, sérovar Saxkoebing (test snap combo FelV et FIV négatif). Ce cas montre que les chats peuvent développer une leptospirose clinique sans cause apparente d'immunosuppression, avec des symptômes comparables à ceux de la forme subaiguë du chien et des particularités ; le sérogroupe Sejroë devra donc être inclus dorénavant dans les recherches sérologiques en cas de suspicion clinique chez le chat.


## Introduction

Leptospirosis is a serious wide spread illness which affects many mammals. It is a potential zoonotic infection, which causes real problems of public health, because it can be transmitted by droplets of urine in direct contact with normal mucous membranes or damaged skin [1].

Cats are sometimes seropositive with prevalence ranging from 4.8 to 35% and dominant serogroups can vary according to geographical location and the feline population studied [2—4]. Still as regards cats, some natural seroconversions have been described [5]. Cases of leptospiruria have been revealed using PCR [2,6], but very few symptoms have appeared in response to experimental infections (1 °C temperature increase, rare appearance of poluyuro-polydipsia [PU/PD], with no mortality [2,7]). There are only very few described cases of clinical leptospirosis in cats [5,8—13]. The symptoms described were most frequently PU/PD and temperature, sometimes accompanied by jaundice and the mortality rate described was high. In the present case, the clinical symptoms were notably different from those described previously and the outcome was favourable.

## Observation

### Medical history

A European cat called Mimi, 4 years old and sterilised three months previously, was brought into the clinic because she had been vomiting and losing weight over the previous few days. This cat, which formerly lived in a flat, had been going outside for 6 months and lived in contact with hunting dogs. She had not been vaccinated nor regularly wormed nor treated for external parasites.

### Clinical examination

When clinically examined all over, the cat appeared to have lost a lot of weight (BMI 3/9), with dull fur in a bad state. She had a marked redness on her pinnas. She was tachypneic (at 70 bpm), hyperesthetic and even allodynic. Closer clinical examination showed dehydration with a persistent skin fold and sticky mucous membranes of normal colour as well as hypothermia (37.6 °C). Mimi had a left parasternal systolic murmur (2/6) and tachycardia (220 bpm). Her popliteus and inguinal lymph nodes were enlarged and her skin was swollen, with hyperemia, hot and painful (pinnas, foot digits and abdomen with a marbled appearance, Fig. 1). When pressure was applied to the pinna or the skin of the belly, with a pane of glass, the hyperemia disappeared and reappeared very quickly when the pressure was relieved. A proteinuria reading of 3+ was observed without any other anomaly showing on the strip and without significant sediment (urine density reading using a refractometer: 1.050).

### Diagnostic hypotheses

The state of shock could be due to kidney failure, a third sector, an electrolyte disorder, systemic inflammatory response syndrome (SIRS), sepsis or cardiac decompensation, pancreatitis or an autoimmune disease affecting internal organs (lupus). Skin lesions could be explained by SIRS, an immune complex reaction or an autoimmune illness, a reaction to drugs (patient's medical history not in favour of this), sepsis or vasculitis.

### Complementary examinations

Biochemical blood analysis showed moderate hyperglycemia (2.13 g/L), pre-renal uremia (1.14 g/L, UV < 0.76) and creatinemia (14.9 mg/L, UV < 24) as well as ALT (16 U/L) and ALKP (13 U/L) liver enzymes within normal range. The Alb/Glob ratio was 0.52 (26/50; UV > 0.8). A snap text (Idexx) did not reveal a serum increase in feline pancreas specific lipase.

The blood count showed neither neutophilia nor thrombopenia. The platelets had on the other hand a systematically active appearance in a blood smear, with many