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CLINICAL CASE

Unusual presentation of systemic coronavirosis in a ferret☆

Présentation atypique d'une coronavirose systémique chez un furet

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Ferret;
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Hyperglobulinemia;
Neuropathy

Summary A young ferret was presented for a posterior paresis, urinary and fecal incontinence, weight loss, anorexia and lethargy. Biochemichemistry and hematology revealed hyperproteinemia with hyperglobulinemia and anemia. Abdominal ultrasonography showed splenomegaly, adenomegaly and nephromegaly with abdnomal echogenicity of the abdominal organs, compatible with a diagnosis of systemic coronavirosis. The ferret was humanely euthanized. On histopathology, a severe pyogranulomatous inflammation with neutrophilic vasculitis was seen in several organs (kidney, liver, lung, spleen and lymph node). Immunochemistry with FIPV3-70 antibody revealed the presence of coronaviral antigen within the lesions, confirming the diagnosis of Feline Infectious Peritonitis-like disease. A slight mononuclear radiculoneuritis was also present in the sciatic nerve, possibly explaining the peripheral neuropathy observed in this ferret. Whereas posterior paresis is common and non-specific in ferrets, fecal and urinary incontinence are rarely described. Radiculoneuritis caused by systemic coronavirus should be considered in young patients presenting these symptoms.

MOTS CLÉS
Furet ;
Coronavirose systémique ;

Résumé Un jeune furet est présenté pour une parésie postérieure, une incontinence fécale et urinaire ainsi qu'une perte de poids, une anorexie et de la léthargie. Des examens biochimiques et hématologiques révèlent une hyperprotéinémie, hyperglobulinémie, et une anémie. Après la réalisation d'une échographie abdominale et de cytoponctions, le diagnostic de

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Parésie ;
Hyperglobulinémie ;
Neuropathie

coronavirose systémique est confirmé post-mortem à l'histologie. Une inflammation pyogranulomateuse et des lésions de vascularite neutrophilique sont présentes sur différents organes (rein, foie, poumon, rate et nœud lymphatique). L'immuno-histochimie réalisée avec les anticorps FIPV3-70 est positive. Les nerfs périphériques sont également infiltrés par une inflammation pyogranulomateuse. Une radiculonévrite semble expliquer la neuropathie périphérique observée chez ce furet. La parésie postérieure est fréquente et non-spécifique chez le furet. À l'inverse, l'incontinence fécale et urinaire est rarement décrite dans cette espèce. Une radiculonévrite provoquée par le coronavirus systémique devrait être évoquée dans le diagnostic différentiel de ces incontinences et parésie chez le jeune furet.

A one-year-old ferret was referred for posterior paresis and fecal and urinary incontinence. The ferret was adopted in a French pet-shop 2 months before. He was correctly vaccinated and dewormed. His food was composed of ferret kibble and snacks. Since his adoption, the owners had always observed a very quiet pet, sleeping almost continuously. According to the owners, fecal and urinary losses during walking or sleeping began 2 weeks ago. Anal glands emptying increased in frequency, without previous excitation or relaxation.

The ferret was thin and dehydrated. He lost 150 g in 2 months (from 900 to 750 g). His rectal temperature was normal (38.4 °C/101.1 °F) [1]. Abdominal palpation was painful and a splenomegaly was found. The bladder was not painful or indurated. It was half-filled and soft with a normal size. The cardiorespiratory examination was within normal limits.

Exploratory behavior was preserved but slightly diminished. Hind limbs weakness was observed. No proprioceptive defects or gait anomalies were noticed during examination, but this is difficult to assess in this species. The ferret interacted and responded normally to various stimuli. Bone and muscle palpation were not painful. Postural reactions and spinal reflexes were normal. The perineal reflex was present and the anus was reactive (correct anal contraction after needle stimulation). At this stage, the neurological examination did not explain the urinary and anal incontinence. The presence of a normal sized bladder and intermittent leakage of urine and stools can evoke a mild peripheral nerve disease or clinical signs linked to abdominal pain.

Following physical examination, remarkable findings included abdominal pain, anorexia, weakness, hindlimb paresis and fecal and urinary incontinence.

A complete blood count pointed out a moderate anemia with neutrophilic leukocytosis (Table 1), compatible with an infectious or an inflammatory process. Biochemistry results revealed a severe hyperproteinemia with severe hyperglobulinemia. A moderate increase of urea was also noticed, most likely related to dehydration.

These findings, particularly hyperglobulinemia, were compatible with an infectious disease (aleutian mink disease, systemic coronavirosis, mycobacteriosis, helicobacteriosis), a chronic digestive inflammation or a neoplastic process (lymphoma, multiple myeloma).

Abdominal pain was compatible with all these hypotheses, but less probably with multiple myeloma.

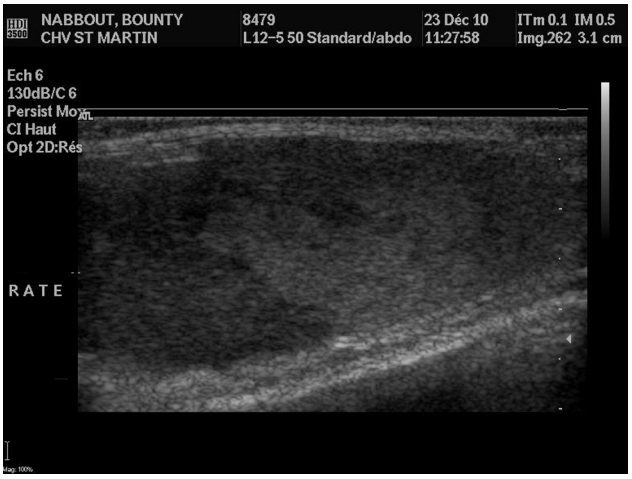

Figure 1. Spleen ultrasonography showing a mixed echoic parenchyma compatible with inflammation and cellular infiltration. From CHVSM.

Abdominal ultrasonography revealed splenomegaly with a heterogeneous parenchyma (Fig. 1), reactive mesenteric lymph nodes measuring up to 1 cm diameter (Fig. 2), a hypoechoic liver (Fig. 3) and irregular kidneys with hypoechoic areas in the parenchyma (Fig. 4). Following the

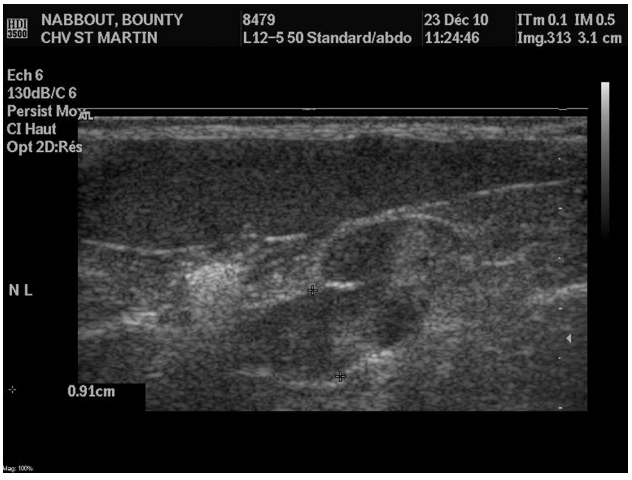

Figure 2. Mesenteric adenomegaly and inflammation are seen on ultrasonography.
From CHVSM.