



**PATIENT PRESENTING CLINICAL SIGNS**

**PATIENT** April Carter  
**HISTORY** History: Weight loss, decreased appetite, PCV 21% today. Had Depo injection on 2/11/22, Vit B 12 inj x 5 March and April.  
**LABORATORY** Abnormal PE/Chem/CBC/UA Results: PCV today 21%. WBC 2,200 - 205 segs, 20% lymph, HCT 26%, FELV/FIV (neg), T4 2.5, FreeT4 26.8.

**SPECIES**

**SPECIES** Feline  
**CLINICAL SIGNS** The lateral radiograph shows round, globoid kidney, one of which appears mildly bossilated. Splenomegaly is present. Gas is present within the GI tract, and very firm stools are present within the descending colon. A mild to moderate interstitial lung pattern is present. Pulmonary vessels are within normal limits.

**BREED**

**BREED** Domestic Shorthair

**SEX**

**SEX** Spayed Female

**AGE**

**AGE** 14 years

**WEIGHT**

**WEIGHT** 10.6 lbs

**INTERPRETED BY**

**INTERPRETED BY** Lisa Carioto, DVM, DVSc, Diplomate ACVIM

**IMAGING PERFORMED BY**

**IMAGING PERFORMED BY** Kelly Vazquez, CVT

**HOSPITAL NAME**

**HOSPITAL NAME** North Haledon VC

**REFERRING VET**

**REFERRING VET** Dr. Mansfield

**INVOICE**

**INVOICE** 99936

**DATE**

**DATE** 4/26/22

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder is well distended with anechoic contents. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of cystoliths, polyps or a mass. A very small amount of sediment is observed in one of the still images, but not in the cine loops provided.

**Kidneys**

The **left** kidney is mildly decreased in size, measuring approximately 3.15 cm (3.80-4.40 cm). The capsule is smooth. The cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Mild mineralization is present, without signs of nephroliths or pyelectasia. The pelvis measures 0.72 mm. Blood flow may be mildly increased, i.e., suggestive of hypertension. The surrounding mesentery is not hyperechoic.

The **right** kidney is also mildly decreased, measuring 3.40 cm (3.80-4.40 cm). The capsule is smooth. The cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Mild mineralization is present, without signs of nephroliths or pyelectasia. Blood flow is increased, i.e., suggestive of hypertension. The surrounding mesentery is not hyperechoic.

**Aortic bifurcation/trifurcation**

No abnormalities observed.

**Adrenal Glands**

The **left** adrenal gland measures 0.32 cm at the cranial pole, 0.38 cm at the caudal pole and 1.15 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland measures 0.30 cm in diameter. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.



**PATIENT**

April Carter

**Spleen**

**SPECIES**

Feline

Mild to moderate splenomegaly; 13.8 mm (normal = 10 mm). A subtle, diffuse, miliary echotexture is observed. The capsule is smooth. Two hyperechoic nodules are visualized mid-body, one of which measures 1.86 mm in diameter x 1.84 mm in length. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

**BREED**

Domestic Shorthair

**Liver**

**SEX**

Spayed Female

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver's echotexture is homogeneous, however, it is diffusely hyperechoic, i.e., it is hyperechoic to the falciform fat and isoechoic to the spleen. The mesentery surrounding the liver is mildly to moderately hyperechoic. No abnormalities are observed with the hepatic vessels visualized.

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The gallbladder wall is within normal limits in thickness (0.8 mm) and echogenicity. Echogenic material (sludge) is present within the GB. The sludge is inspissated. There is no evidence of edema surrounding it. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction.

**WEIGHT**

10.6 lbs

**Gastrointestinal**

**INTERPRETED BY**

Lisa Carioto, DVM,  
DVSc, Diplomate  
ACVIM

A large amount of ingesta and gas are present within the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.

The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved.

The colonic wall is not thickened and mural detail is considered normal.

**IMAGING PERFORMED BY**

Kelly Vazquez, CVT

**Pancreas**

The left limb is hypoechoic, with a few punctate hyperechoic foci. The surrounding mesentery is very mildly hyperechoic.

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Similar findings are noted with the right limb, although it is not as hypoechoic compared to the left.

**REFERRING VET**

Dr. Mansfield

**Other**

**Lymph nodes** No abnormalities are observed

**Abdominal effusion** is not visualized.

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**ULTRASONOGRAPHIC FINDINGS**

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- The splenomegaly and the subtle miliary pattern may be due to extramedullary hematopoiesis as a result of April's anemia. Other differential diagnoses include hypersplenism and reactive



<b>PATIENT</b>	hyperplasia, as well as splenitis, due to immune mediated induced antigenic stimulation and secondary inflammation. Neoplasia, such as lymphoma, mast cell tumour, histiocytic sarcoma, or other round cell tumor cannot be excluded. A fine needle aspirate is required to achieve a definitive diagnosis.
April Carter	
<b>SPECIES</b>	<ul style="list-style-type: none"> <li>The two hyperechoic splenic nodules are most likely due to mineralization, fat, as well as possible fibrosis.</li> </ul>
Feline	
<b>BREED</b>	<ul style="list-style-type: none"> <li>The diffuse hyperechogenicity of the liver may be due to the administration of steroids (Depo-medrol). Differential diagnoses, such as cholestasis, cholangitis/cholangiohepatitis and cholecystitis with a secondary bacterial infection cannot be excluded. Furthermore, hepatic lipodosis due to hyporexia may also be contributing to the hyperechogenicity of the liver.</li> </ul>
Domestic Shorthair	
<b>SEX</b>	<ul style="list-style-type: none"> <li>The pancreatic changes are suggestive of mild pancreatitis. The hyperechoic foci may be due to fibrosis, mineralization and/or amyloid deposition.</li> </ul>
Spayed Female	
<b>AGE</b>	<ul style="list-style-type: none"> <li>The renal changes are suggestive of age related degeneration, however, glomerulonephritis or interstitial nephritis may be contributing to the abnormalities observed. Increased blood flow is suggestive of hypertension. Pyelonephritis cannot be excluded despite the absence of sonographic signs.</li> </ul>
14 years	
<b>WEIGHT</b>	
10.6 lbs	
<b>INTERPRETED BY</b>	<b><u>INTERPRETATION OF THE FINDINGS &amp; FURTHER RECOMMENDATIONS</u></b>
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	A TLI, serum cobalamin, folate and spec fPL are strongly recommended to assess for underlying maldigestion and malabsorption disease, i.e., exocrine pancreatic insufficiency, as well as dysbiosis.
<b>IMAGING PERFORMED BY</b>	Treatment for pancreatitis is recommended, including analgesics, such as buprenorphine as well as supportive care, such as maropitant, +/- subcutaneous.
Kelly Vazquez, CVT	Deworming with a broad spectrum dewormer, such as fenbendazole, is suggested if April goes outdoors or if she lives with other pets that go outdoors.
<b>HOSPITAL NAME</b>	A veterinary prescription brand hypoallergenic diet, whether hydrolyzed or novel protein, may be tried. Multiple diets may be required, including only canned food, as some individuals cannot digest dry. The kibble may be soaked if an all canned diet is cost prohibitive.
North Haledon VC	Small, frequent meals are recommended.
<b>REFERRING VET</b>	A 10-14 day trial with famotidine or omeprazole may be considered.
Dr. Mansfield	Supplementation with vitamin B12 is suggested if the test is cost prohibitive.
<b>INVOICE</b>	Cholestasis, cholangitis/cholangiohepatitis and cholecystitis may occur, in addition to secondary ascending bacterial infections. Although indiscriminate use of antibiotics is not normally recommended, one could start treatment with a broad-spectrum antibiotic if an improvement is not observed with the above treatment after 48 to 72 hours.
99936	Treatment with darbopietin may be administered to help treat her anemia.
<b>DATE</b>	The administration of long acting steroids may be causing GI hemorrhage and contributing to April's anemia.
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A fine needle aspirate of the spleen may be performed to confirm extramedullary hematopoiesis, reactive hyperplasia or hypersplenism.

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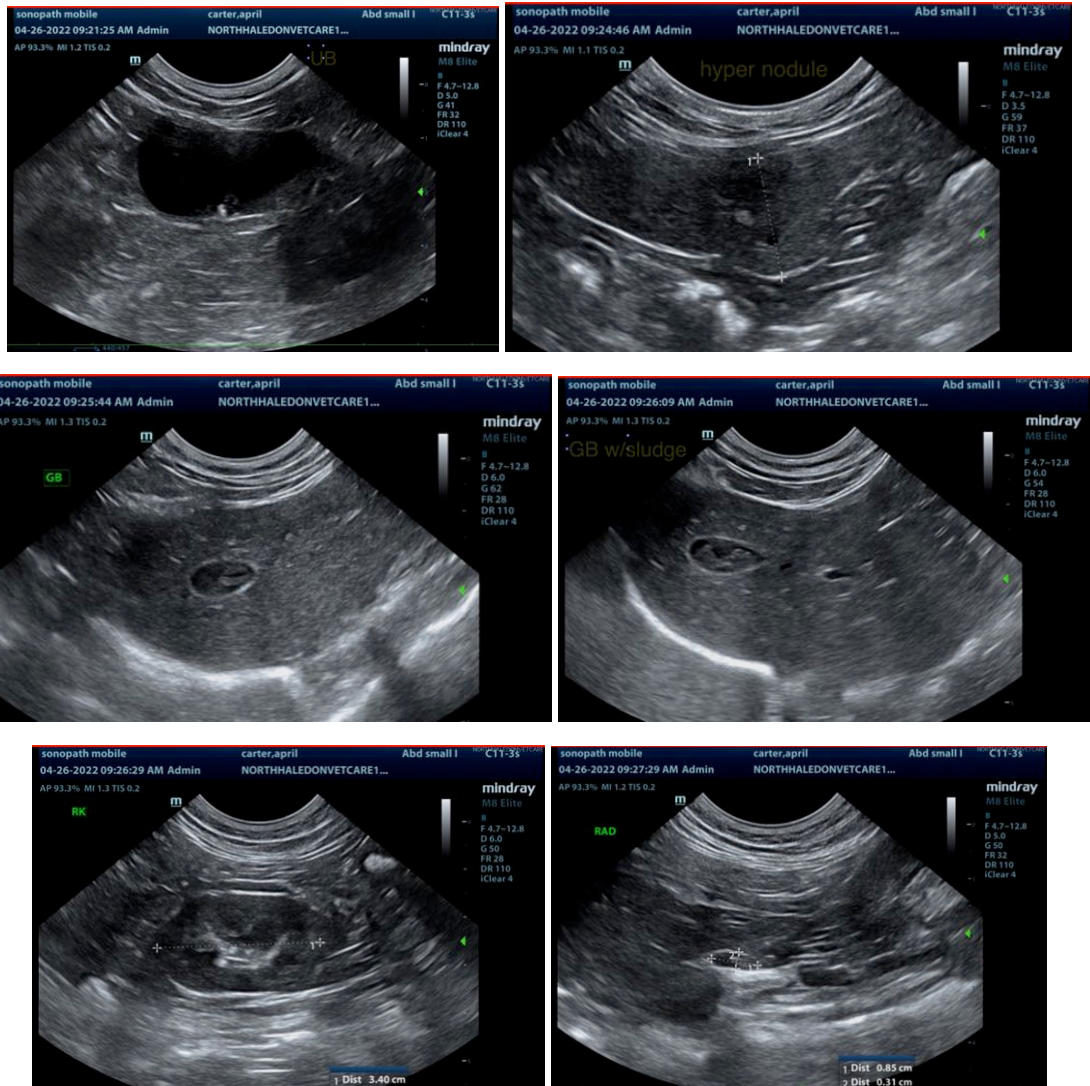
Dr. Mansfield

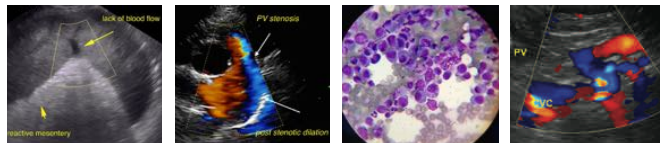
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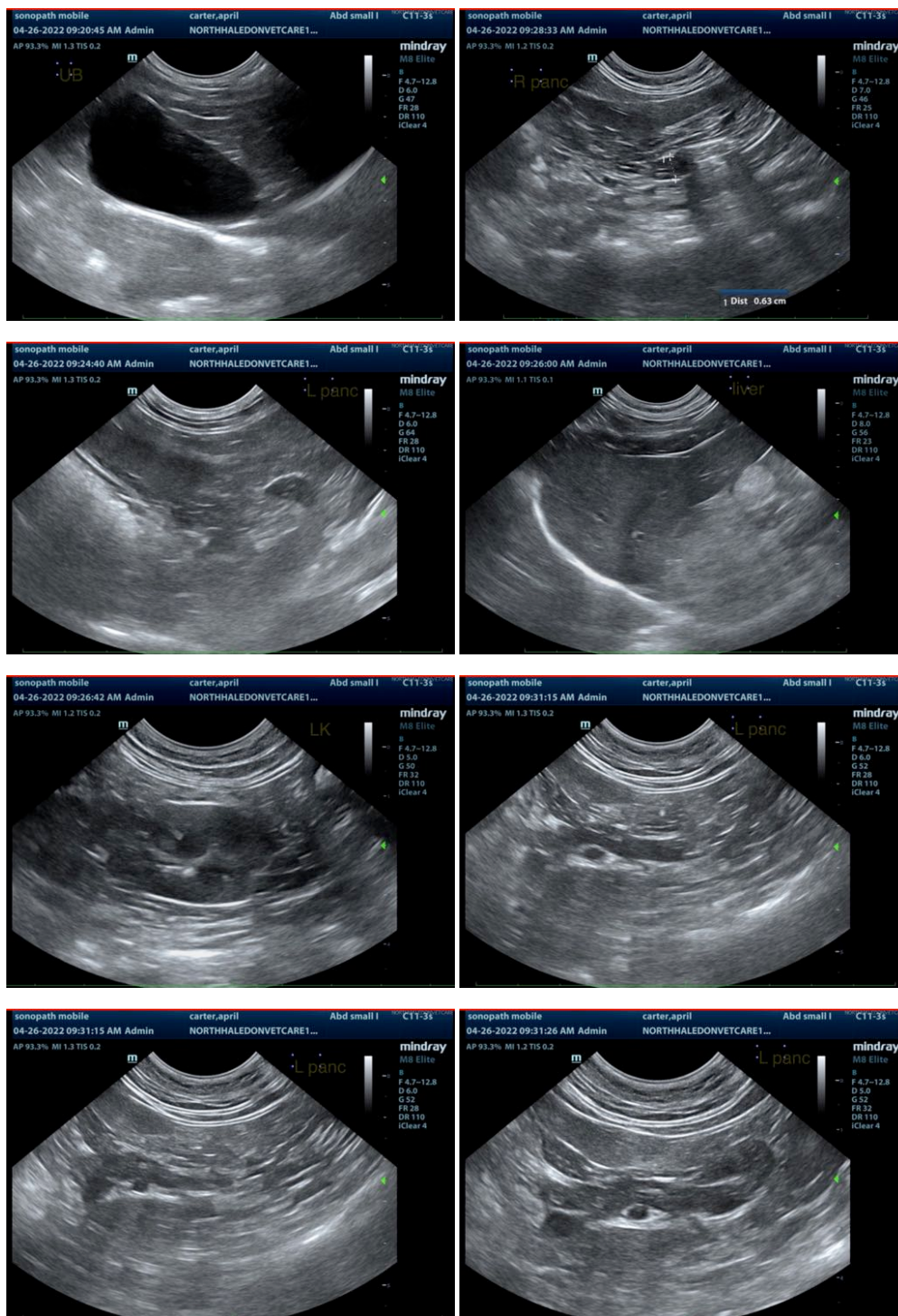
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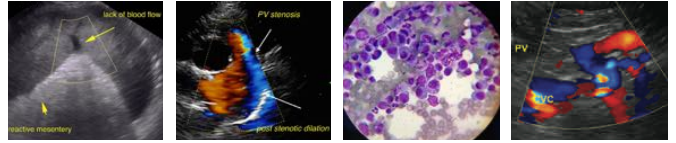
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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