



PATIENT	PRESENTING CLINICAL SIGNS
Crush Martinez	Previously diagnosed with IBD based on intestinal biopsy for chronic vomiting. Fed hypoallergenic diet. Recently developing chronic non-responsive anemia, mild increase SDMA. Heart murmur noted on exam
SPECIES	Abnormal PE/Chem/CBC/UA Results: Grade 2/6 right sided systolic heart murmur. MM pale pink
Feline	Abdomen normal, chronic URI. Hct = 0.24, SDMA = 18; urine sp gr = 1.040; T4 = 21. Normal chemistries and urine otherwise. BP = 127/67; 124/68, 120/78, 114/84.
BREED	ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN
Domestic Shorthair	Urinary System
SEX	The urinary bladder is adequately distended with anechoic contents. No abnormalities are present with the trigone or proximal urethra, and there is no evidence of polyps or a mass. A small amount of free floating sediment is observed, in addition to a moderate amount of hyperechoic sediment that has settled by gravity. The latter casts an acoustic shadow and is consistent with multiple, small cystoliths and/or the mineralization of sediment/sand. The wall is not thickened and is relatively smooth and regular, despite the presence of cystoliths/mineralized sand.
Neutered male	
AGE	The left kidney measures 3.73 cm (3.80-4.40 cm). The capsule is smooth, however, the cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. There is no evidence of mineralizations, nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.
12 years	
WEIGHT	The right kidney measures 4.11 cm (3.80-4.40 cm). The capsule is smooth, however, the cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. There is no evidence of mineralizations, nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.
4.59 kg	
INTERPRETED BY	
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	
IMAGING PERFORMED BY	Adrenal Glands
Dr. Gumley	The left adrenal gland measures 0.34 cm at the cranial pole and 0.37 at the caudal pole. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.
HOSPITAL NAME	The right adrenal gland measures 0.43 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.
Cedarview AH	
REFERRING VET	Spleen
Dr. Limbrick	The spleen is within normal limits in size 8.4 mm (normal = 10 mm), echotexture, and echogenicity. The capsule is smooth. Multifocal, pinpoint, hyperechoic foci, which are most consistent with age-related mineralizations, are dispersed in a haphazard manner throughout the parenchyma. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.
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PATIENT

Crush Martinez

Liver

SPECIES

Feline

There are no obvious signs of hepatomegaly. Liver borders are smooth, but slightly rounded. Its echotexture is homogeneous, however, it is diffusely hyperechoic, i.e. it is isoechoic to the falciform fat. No abnormalities are observed with the hepatic vessels. Hyperechogenicity of the portal walls is observed.

BREED

Domestic Shorthair

The gall bladder is not distended. A trivial amount of echogenic material (sludge) is present within the lumen. The wall appears as hyperechoic “inner and outer” walls, with an echogenic centre, which is suggestive of inflammation. The wall is also thicker than the normal reference range. The cystic duct is mildly tortuous and the common bile is mildly dilated at the level of the duodenal papilla, however, the remainder of the biliary tree is within normal limits and there are no signs of an obstruction.

SEX

Neutered male

Gastrointestinal

AGE

12 years

The gastric wall is within normal limits in thickness and the wall layers are well defined.

WEIGHT

4.59 kg

The duodenum and multiple segments of the small intestines, particularly the jejunum, are mildly thickened, measuring up to 0.33 cm. Although the definition of the wall layers is well preserved, fogging of the mucosa is present. The mucosa is more prominent than what is considered normal, while the muscularis is moderately thickened, diffusely. No abnormalities are observed with the ileo-cecal-colic junction or surrounding mesentery. The colonic wall is not thickened and mural detail is considered normal. No obvious abnormalities are observed with its peristalsis.

INTERPRETED BY

Lisa Carioto, DVM,
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ACVIM

Pancreas

The right limb is heterogeneous with multiple hyperechoic areas dispersed haphazardly throughout its parenchyma, as well as small hypoechoic nodules. The parenchyma surrounding the pancreaticoduodenal duct is hyperechoic, however, the surrounding mesentery is not overtly hyperechoic. Differential diagnoses for the above findings include fibrosis due to previous episodes of pancreatitis, ischemia or amyloid deposition, as well as nodular hyperplasia. Signs of neoplasia are not appreciated.

IMAGING PERFORMED BY

Dr. Gumley

Portions of the left limb are mildly hypoechoic compared to the surrounding mesentery, while others are isoechoic. It, too, has hyperechoic foci and hypoechoic nodules of variable size, suggestive of fibrosis and nodular hyperplasia, respectively. The appearance of the left limb is suggestive of a mild, smoldering active pancreatitis, in addition to scar tissue secondary to previous episodes of pancreatitis or age-related changes. There are no obvious signs of neoplasia.

HOSPITAL NAME

Cedarview AH

REFERRING VET

Dr. Limbrick

Other

Lymph nodes No abnormalities are observed

Abdominal effusion is not visualized.

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ULTRASONOGRAPHIC FINDINGS

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- Crush’s sonographic findings are highly suspicious of cholangitis/cholangiohepatitis, cholecystitis, pancreatitis and inflammatory bowel disease. That is, triaditis is considered the



PATIENT	cause of Crush's sonographic findings and clinical signs. Hepatic lipidosis secondary to hyporexia is also likely contributing to the diffuse hyperechogenicity of her liver.
Crush Martinez	
SPECIES	
Feline	<ul style="list-style-type: none"> The intestinal changes are attributed to inflammation secondary to inflammatory bowel disease, which was previously diagnosed. There are no signs that suggest that IBD has "transformed" into lymphoma, however, biopsies would be required to exclude the latter statement. Other forms of intestinal neoplasia are not observed and are considered unlikely. The appearance of the left limb is suggestive of a mild, smoldering active pancreatitis. Both the left and right limbs show signs of scar tissue secondary to previous episodes of pancreatitis and/or age-related changes, as well as possible amyloid deposition. There are no obvious signs of neoplasia.
BREED	
Domestic Shorthair	
SEX	
Neutered male	<ul style="list-style-type: none"> Cholecystitis is suspected based on the appearance of the gall bladder and biliary tree. As mentioned above, one cannot rule out cholestasis and cholangitis/cholangiohepatitis, in addition to an ascending bacterial infection, as well as secondary hepatic lipidosis. Multiple cystoliths and mineralized sediment (sand) are present within the urinary bladder. There are no obvious signs of an obstruction.
AGE	
12 years	<ul style="list-style-type: none"> Mild degenerative changes of both kidneys, which are suggestive of age related degeneration.
WEIGHT	
4.59 kg	
INTERPRETED BY	<u>INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS</u>
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	A urine culture and sensitivity is recommended to exclude a urinary tract infection associated with the cystolithiasis/mineralized sediment. An evaluation of Crush's diet for a hypoallergenic diet that has a s/o index is suggested.
IMAGING PERFORMED BY	The anemia is likely due to chronic inflammation. Despite the lack of regeneration, one cannot exclude chronic, intermittent, gastrointestinal hemorrhage due to inflammatory bowel disease.
Dr. Gumley	Analgesia for visceral pain, including buprenorphine and gabapentin, is suggested for two to four weeks, depending on Crush's clinical signs. The administration of prednisolone at 0.5 mg/kg/day is also suggested. The dose may be increased to 1 mg/kg/day, if necessary. Supportive care, such as maropitant (Cerenia), mirtazapine and subcutaneous fluids, may also be considered.
HOSPITAL NAME	A TLI, vitamin B12, and folate may be performed as cats suffering from IBD and pancreatitis may suffer from cobalamin deficiencies and exocrine pancreatic insufficiency. If the test is cost prohibitive, supplementation with vitamin B12 is suggested.
Cedarview AH	An evaluation of Crush's diet for a hypoallergenic diet that has a s/o index is suggested, as mentioned above.
REFERRING VET	If an improvement is not observed with the above, the treatment of a secondary bacterial infection may be warranted. Although indiscriminate use of antibiotics is not normally recommended, one could consider treatment with a broad-spectrum antibiotic and reassess liver enzyme activities, including a GGT, in a few weeks.
Dr. Limbrick	
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Crush Martinez

SPECIES

Feline

BREED

Domestic Shorthair

SEX

Neutered male

AGE

12 years

WEIGHT

4.59 kg

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ACVIM

IMAGING PERFORMED BY

Dr. Gumley

HOSPITAL NAME

Cedarview AH

REFERRING VET

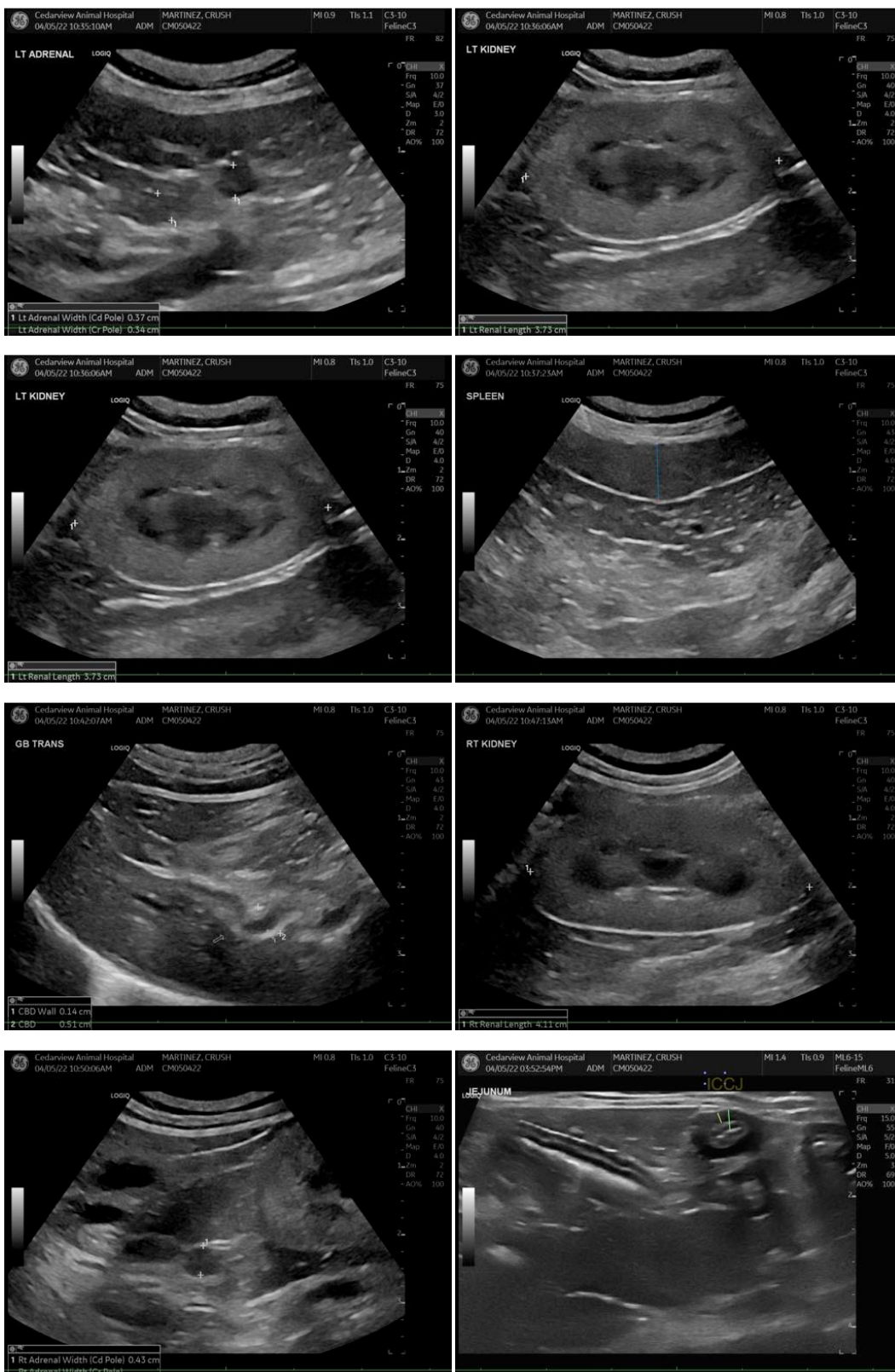
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HOSPITAL NAME

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REFERRING VET

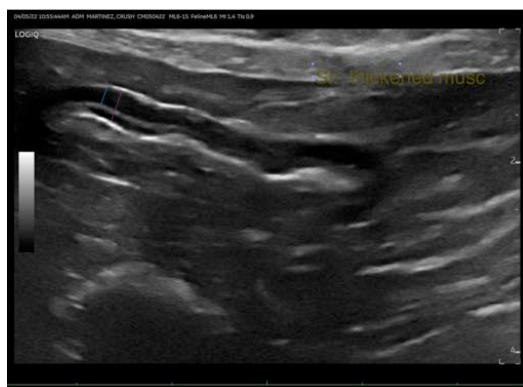
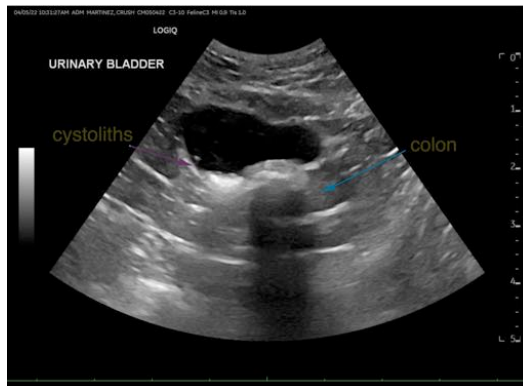
Dr. Limbrick

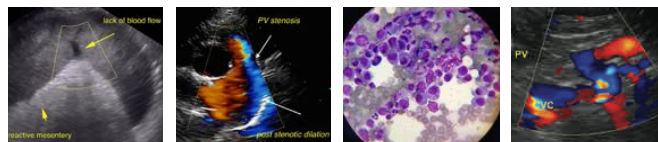
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PATIENT

Crush Martinez

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.

SPECIES

Feline

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

Lisa.Carioto@sonopath.com

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Domestic Shorthair

SEX

Neutered male

AGE

12 years

WEIGHT

4.59 kg

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**IMAGING
PERFORMED BY**

Dr. Gumley

HOSPITAL NAME

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