

**PATIENT**

Hattie Bolton

SPECIES

Feline

BREED

Domestic Shorthair

SEX

Spayed Female

AGE

4 years

WEIGHT

6.5 Pounds

INTERPRETED BYLisa Carioto, DVM,
DVSc, Diplomate
ACVIM**IMAGING PERFORMED BY**

Amy Mayhew LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VET

Mitten AH

INVOICE

99269

DATE

4/13/22

PRESENTING CLINICAL SIGNS

Six week history of decreased appetite with weight loss. At initial presentation on 03/09/2022 patient was 8.2#. At re-presentation patient was 6.5#. Physical examination at initial presentation was overall unremarkable with a mild greasy, unkempt appearance. That was still present at re-presentation along with icteric sclera and pinna. Patient is currently on Denamarin, Clavamox Drops 43.75mg) PO BID, Metronidazole 30mg PO BID and Mirataz SID PRN.

Abnormal PE/Chem/CBC/UA Results: Exam findings and abnormal lab values: On 03/09/2022: - FeLV / FIV / HWT - all negative - Mild regenerative anemia - r/o hemolysis, hemorrhage, other - Mild eosinopenia - r/o spurious, stress, inflammation, other - Mild hyperglycemia - r/o stress vs DM vs other - Mildly decreased BUN and Creatinine - r/o secondary to PU/PD, decreased intake / muscle loss, other - Mildly decreased ALT - not clinically significant - Total T4 WNL - 2.1 - Fructosamine WNL On 04/12/2022 blood work revealed: - Mildly elevated RDW - r/o splenic contraction, regeneration, other - Mild thrombocytosis - r/o stress, inflammation, other - Mildly decreased creatinine - r/o secondary to weight loss vs other - Mild hyperglycemia - r/o stress vs other - Mildly elevated ALT, markedly elevated AlkPhos, GGT - r/o cholangiohepatitis, hepatic lipidosis, infectious, toxin, neoplasia, other - Markedly elevated total bilirubin - r/o hepatic, posthepatic > prehepatic

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. There is no evidence of cystoliths, polyps or a mass. A trivial amount of sediment is observed.

Aortic Bifurcation/Trifurcation

No abnormalities observed.

Kidneys

The **left** kidney measures 3.72 cm (3.80-4.40 cm), very mildly decreased in size, although this may be normal for Hattie. The capsule is very mildly bossilated (observed only with the linear probe). Its overall architecture, including the definition of the cortico-medullary junction, are preserved. There are no signs of mineralizations, nephroliths or pyelectasia. The pelvis measures 1.19 mm. The surrounding mesentery is hyperechoic.

The **right** kidney measures 3.96 cm (3.80-4.40 cm). Findings are similar to the left kidney.

Adrenal Glands

The **left** adrenal gland measures 0.32 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.

The **right** adrenal gland measures 0.39 cm in diameter. Findings are similar to the left adrenal gland.

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Spleen

The spleen is within normal limits in architecture, and echotexture. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified. The spleen is smaller in size compared to what is considered normal, measuring 5.8 mm (normal reference range less than 10 mm). Hypovolemia cannot be excluded. Although the echogenicity appears hypoechoic in certain views, this is most likely a result of the stark contrast from the severely hyperechoic mesentery.

Liver

Possible hepatomegaly is present, however, this is better characterized at the time of the ultrasound or using radiographs. The liver's borders are smooth and sharp, with some lobes very mildly rounded. The liver's echotexture is homogeneous, however, it is severely hyperechoic, i.e., it is markedly hyperechoic to the falciform fat. No abnormalities are observed with the hepatic vessels.

The gall bladder is not abnormally distended. A trivial amount of echogenic material (sludge) is observed within the lumen. The wall is not hyperechoic and is within normal limits with regard to thickness. Its luminal surface is smooth and regular. The cystic duct measures 3.6 mm and is mildly tortuous. The common bile duct measures 2.3 mm. No obvious abnormalities are noted with the duodenal papilla. Choleliths and microliths are not visualized.

Gastrointestinal

The gastric wall and pylorus are within normal limits in thickness, however, the mucosa is prominent. There is no loss of definition of the normal architecture of the wall layers. A small amount of gas and liquid are present within the stomach. No obvious abnormalities are noted with peristalsis.

The small intestinal wall thickness, including the duodenum, is within normal limits. A moderate amount of gas is present within the duodenum. The definition of the wall layers is preserved. Abnormally dilated loops of bowel are not observed. The ileo-cecal-colic junction is unremarkable.

A very large amount of gas and soft fecal matter are noted within the colon. Although the colonic wall is not thickened and mural detail is considered normal, subjectively, the muscularis layer is more prominent.

There are no obvious signs of a mass, foreign body, or an obstruction of the GI tract.

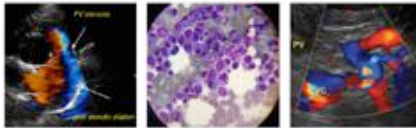
Pancreas

The **left limb** is within normal limits in size. It is very mildly hyperechoic surrounding the pancreaticoduodenal duct, however, the surrounding mesentery and peripancreatic fat are severely hyperechoic.

Similar findings are observed with the **right limb** of the pancreas.

Other

Lymph nodes No abnormalities are observed.

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Abdominal effusion is not visualized.

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ACVIM**ULTRASONOGRAPHIC FINDINGS**

- Suppurative cholangitis/cholangiohepatitis, and cholestasis are suspected. Cholecystitis cannot be excluded despite the absence of classical sonographic signs.
- Overt enlargement and severe hypoechogenicity of the pancreas is not observed, however, the surrounding mesentery is markedly hyperechoic, which is highly suggestive of inflammation, i.e. active pancreatitis. Hattie may not necessarily be demonstrating classical sonographic signs of pancreatitis, or she may have experienced a recent episode of pancreatitis from which the mesenteric inflammation is persisting.
- Another possibility is the intermittent passing of choleliths that are no longer present on today's ultrasound. Cats who experience intermittent passing of choleliths may suffer from signs of abdominal pain and may be "misdiagnosed" as suffering from intermittent bouts of pancreatitis.
- Hepatic lipidosis due to hyporexia is likely contributing to the diffuse and severe hyperechogenicity of the liver.
- The left kidney is very mildly decreased in size and has a very mildly bossillated capsule. Its overall architecture is well preserved; it is possible that this is normal for Hattie.
- The intestinal abnormalities are subtle and are attributed to inflammation secondary to the suspected suppurative cholangitis/cholangiohepatitis, cholecystitis, and pancreatitis. However, underlying inflammatory bowel disease cannot be excluded i.e. Hattie may be suffering from "triaditis".
- Subjectively, the spleen appears smaller than normal, i.e., hypovolemia cannot be excluded.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A TLI, serum cobalamin, and folate, +/- spec fPL are recommended to assess for underlying maldigestion and malabsorption disease, as many of these cats may also suffer from exocrine pancreatic insufficiency.

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Subcutaneous injections of vitamin K at 0.5 mg/kg should be administered to help treat the cholestasis.

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Analgesia for visceral pain, such as buprenorphine, is suggested, as well as supportive care, such as subcutaneous fluids. Her current medications for at least 4-6 weeks, and an easily digestible diet that appetizing, to prevent her from developing further weight loss and sarcopenia.

A re-evaluation of the CBC and serum biochemical profile, including a GGT, total bilirubin and SDMA 4-6 weeks prior to discontinuing the antibiotics is suggested. If an improvement is not observed, a decision to pursue further diagnostics, for example, a FNA of the liver, may be pursued.

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Note, diabetes may occur in cats following these episodes.

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Although some treatment recommendations have been described, an internal medicine consult may be requested to describe all possible options in further detail. This may be done by email or telephone.

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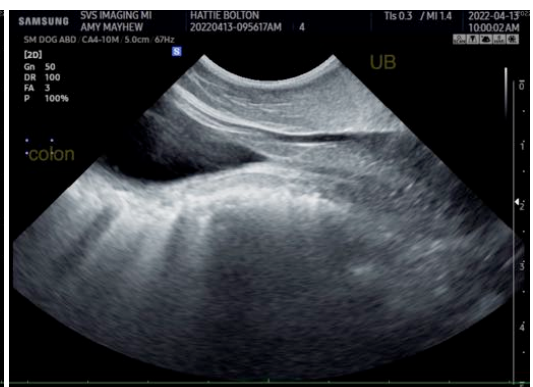
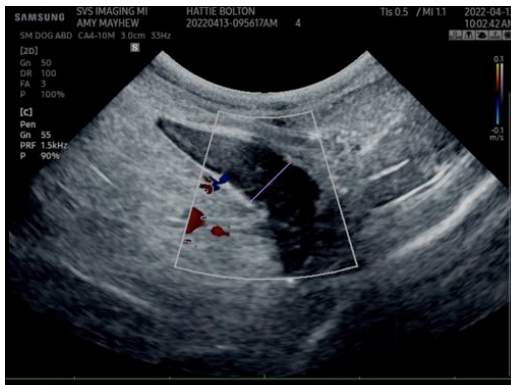
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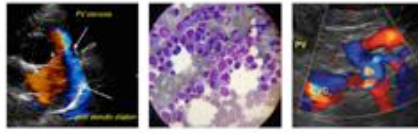
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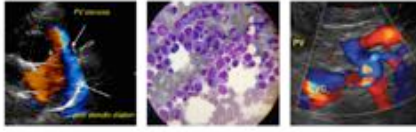
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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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