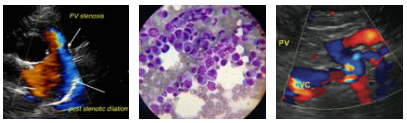
IMAGING PERFORMED BY

IntraPet.com



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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DATE
5/2/22

PATIENT
Lucy Wagner

SPECIES
Canine

BREED
Doberman Mix

SEX
Spayed Female

AGE
11/7/12

WEIGHT
70.4 lbs

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

HOSPITAL NAME
Animal Care center

REFERRING VET
Dr. Beavers

INVOICE
30073

PRESENTING CLINICAL SIGNS

Hx of GI issues- is a diabetic (is on 40 units BID). 4/23 came in for blood and mucous in stool. Continued weight loss.
Current Medications: 40 units insulin BID, Metronidazole 500mg BID. Gabapentin for scan.
Lab Results: Showed marked increase in Amylase/Lipase and spec CPL.
Radiographs: Ful cranial abdomen- colon pushed back, cannot visualize spleen. Possibly enlarged liver, possible mass effect in cranial abdomen.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Rachel Brilhart, RDMS.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is adequately distended. A moderate amount of free floating sediment is present. The wall is thicker than normal and irregular. The mucosa appears scalloped and an echogenic "mass-like" structure is noted from the dorsal wall. No abnormalities are present with the trigone or the proximal urethra, and there is no evidence of cystoliths.

Kidneys

The **left** kidney measures 7.25 cm. The capsule is smooth. The cortex is mildly hyperechoic, i.e. it is isoechoic to the spleen. A mild loss of the normal definition of the cortico-medullary junction is present. A very subtle hyperechoic band is observed along the medulla, traversing parallel to the corticomedullary junction. Mineralizations of the diverticulae are present, without evidence of nephroliths. The pelvis measures 0.24 cm. An normal accumulation of intrapelvic fat is noted. Blood flow is excellent, but not increased. The surrounding mesentery is not hyperechoic.

The **right** kidney measures 6.44 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. Mineralizations of the diverticulae are present, without evidence of nephroliths. An normal accumulation of intrapelvic fat is noted. Blood flow is excellent, but not increased. The surrounding mesentery is not hyperechoic.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.70 cm at the cranial pole, 0.51 cm at the caudal pole and 2.44 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 0.63 cm at the cranial pole, 0.60 cm at the caudal pole and 2.22 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.

Spleen

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. Pinpoint hyperechoic foci are observed dispersed throughout the parenchyma, which are attributed to mineralization. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver

Hepatomegaly is suspected, however, this is better characterized at the time of the ultrasound or with radiographs. Liver borders are smooth but mildly rounded. A diffuse, mildly coarse or granular echotexture is observed, which may be due to a reactive hepatopathy. It is also diffusely hyperechoic; i.e., the cortex of the right kidney and liver are isoechoic, however, the right kidney is hyperechoic compared to normal. No focal nodules or cystic lesions are observed. Perivascular cuffing is present, which may be due to fat, as well as some mild mineralization. There is no evidence of hepatic congestion.

The gall bladder (GB) is moderately distended with echogenic material (sludge) within the lumen. The sludge is free floating, gravity-dependent, and inspissated, forming nodules, which are adhered to the wall. The wall is mildly hyperechoic and very mildly thicker than normal, measuring 1.5 cm. Its luminal surface is irregular. There is no evidence of edema surrounding the GB. The portions of the cystic duct observed is not dilated or tortuous, i.e. there are no signs of an obstruction. The common bile duct is not visualized due to the large amount of ingesta in the stomach.

Gastrointestinal

A large amount of ingesta is present within the stomach, however I am assuming that Lucy was not fasted for the ultrasound due to the fact that she is diabetic. The gastric wall appears thicker than normal in certain regions. Definition of the wall layers are well preserved. 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. Abnormally dilated loops of bowel are not observed.

Ingesta is present in the transverse colon. The colonic wall is not thickened and mural detail is considered normal.

Pancreas

The pancreas is markedly enlarged (diameter of 3.57 cm), has a heterogeneous echotexture and irregular contours. Despite the heterogeneous echotexture, obvious masses are not evident; it is more of a mottled appearance, with hyperechoic, punctate foci or areas dispersed haphazardly throughout its parenchyma. The pancreatico-duodenal duct measures 0.28 cm. It is hypoechoic compared to the surrounding mesentery. Differential diagnoses for the hyperechoic foci or regions include fibrosis due to previous episodes of pancreatitis, ischemia or amyloid deposition. Age related changes may also be playing a role in the abnormalities observed.

Other

Lymph nodes No abnormalities are observed

Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

- Active pancreatitis is suspected, however, infiltrative neoplasia cannot be excluded.

- Hepatomegaly is suspected. This is in addition to the diffuse, mildly coarse or granular echotexture and diffuse hyperechogenicity. The differential diagnoses for the hepatic changes observed include

vacuolar and reactive hepatopathies, respectively. The former may occur due to chronic illness, stress, including fat deposition secondary to diabetes mellitus. However, underlying hepatitis, which Dobermans are predisposed to, cannot be excluded. Other differential diagnoses include cholestasis, cholangitis/cholangiohepatitis and cholecystitis.

- The appearance of Lucy's gall bladder is not consistent with a classical mucocele. A mucocele in its early development cannot be excluded, however. Although the presence of gall bladder sludge is not necessarily clinically significant, dogs with diabetes mellitus are more predisposed to gallbladder sludge and developing mucoceles. Also, some dogs may show clinical signs of gastroesophageal reflux disease as a result of the sludge, therefore, obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required depending on the patient's history.

- The sonographic appearance of the mucosa of the urinary bladder is most compatible with a polypoid cystitis. Neoplasia, such as a transitional cell carcinoma, is considered highly unlikely, but cannot be excluded. A urinalysis and urine culture and sensitivity are recommended.

- Mild renal changes are present, which are suggestive of age related degeneration. A very mild pyelectasia of the left kidney is present. The pyelectasia may be due to polydipsia and polyuria if Lucy's diabetes is not well regulated. Other differential diagnoses include glomerulonephritis or interstitial nephritis. Pyelonephritis cannot be excluded despite the absence of classical sonographic signs.

- The mineralization observed within the spleen is not considered clinically significant.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Fine needle aspirates of the pancreas an liver are suggested. Although a hepatic biopsy yields more diagnostic results, particularly regarding the architecture, a fine needle aspirate will help determine if inflammation is present. Staining for copper is also indicated. A change in Lucy's diet to one that is more restricted in copper may be required.

A TLI, serum cobalamin, and folate concentrations are strongly recommended as dogs with diabetes mellitus may develop exocrine pancreatic insufficiency, which can lead to malabsorption and maldigestion and severe weight loss.

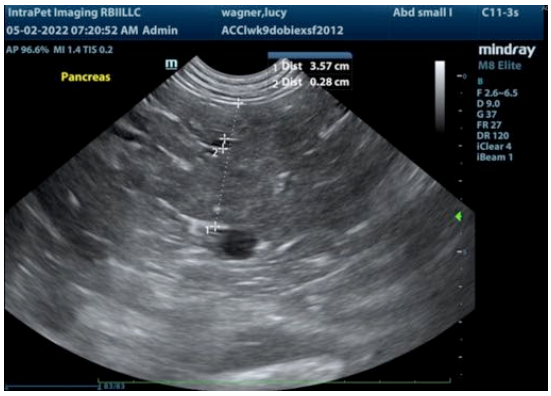
Note, the serum cobalamin should be above 500 pmol/L.

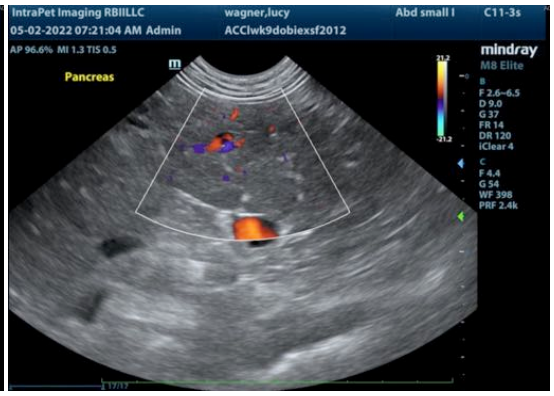
Placement of a Freestyle Libre sensor is strongly recommended to ensure Lucy's diabetes mellitus is well regulated.

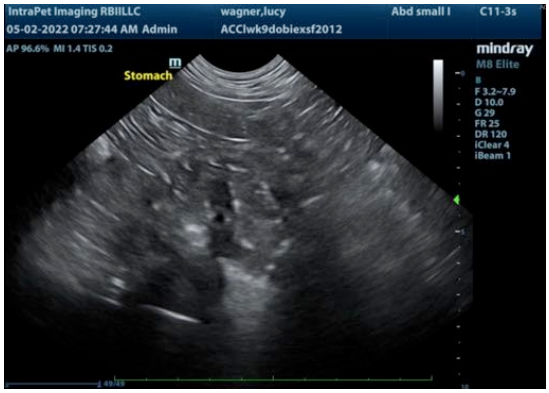
A urinalysis and urine culture and sensitivity are recommended based on the appearance of the urinary bladder. Treatment for a polyploid cystitis usually consists of antibiotic therapy of approximately 6 to 8 weeks. A sonographic re-evaluation of the urinary bladder is suggested approximately 4 weeks following initiation of antibiotics to assess Lucy's response, i.e. the polyps should be regressing. If there is no improvement, further diagnostics are suggested.

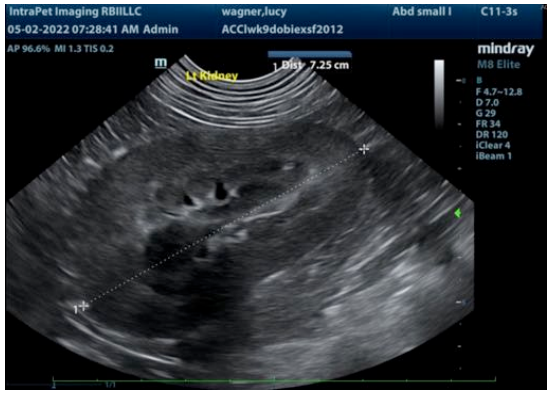
If the urine culture is negative, a urine protein: creatinine ratio is suggested to exclude glomerulonephritis as Lucy's albumin is at the low end of the normal reference range and proteinuria was present on her urinalysis in February.

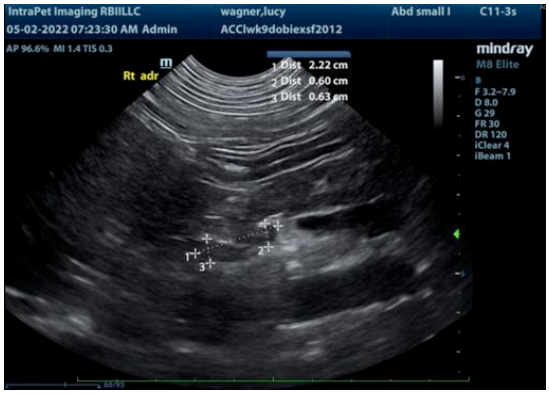
An arterial blood pressure is recommended to rule out hypertension, ideally in the presence of the client to minimize the effects of stress.

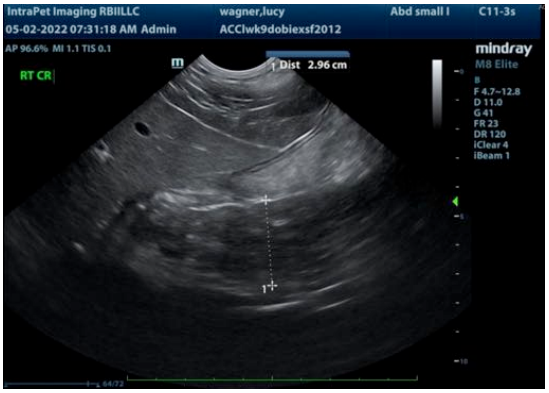








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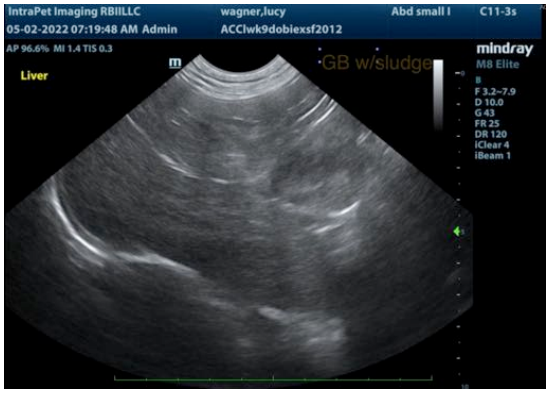
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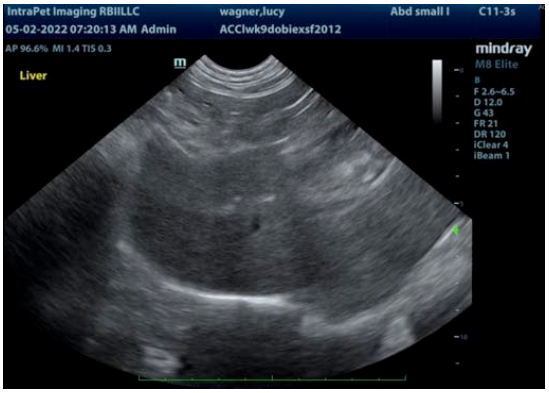
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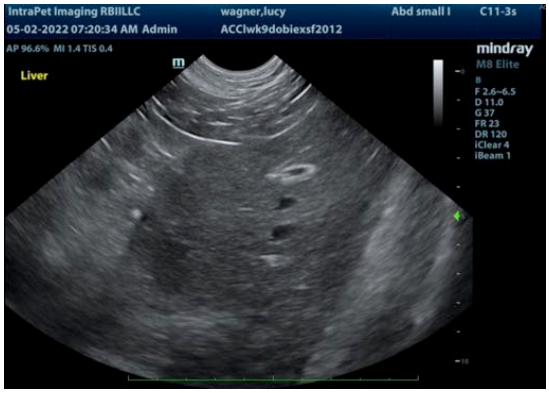
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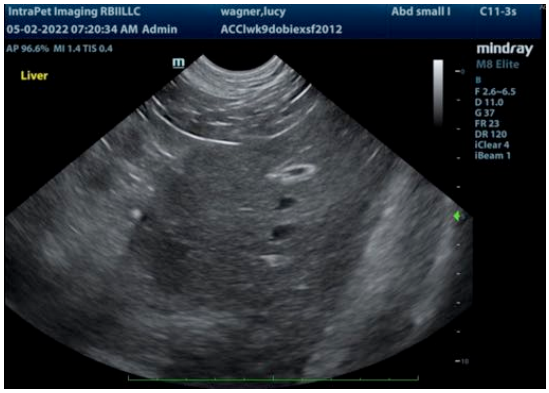
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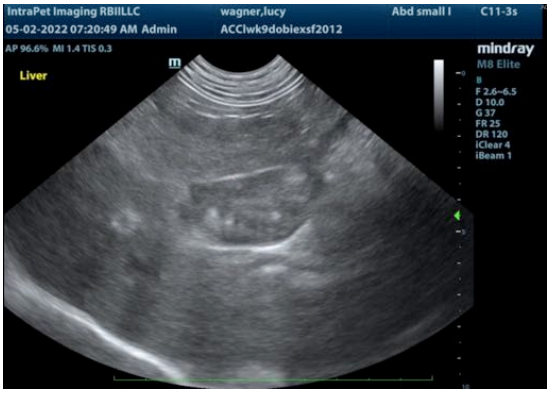
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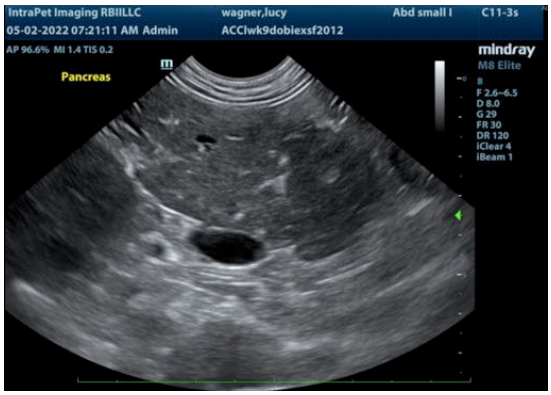
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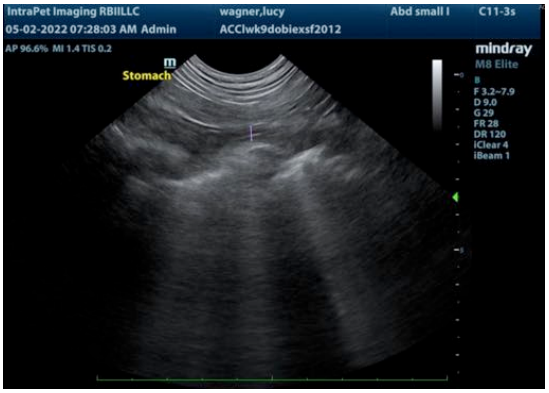
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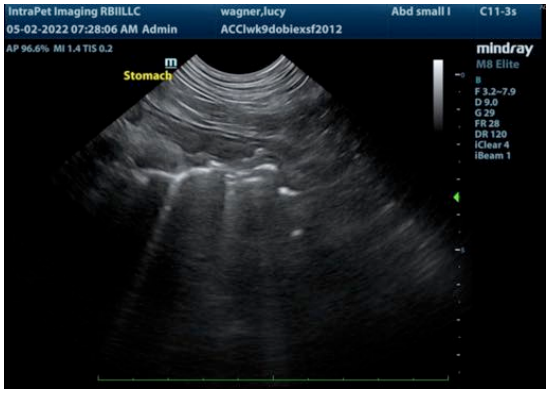
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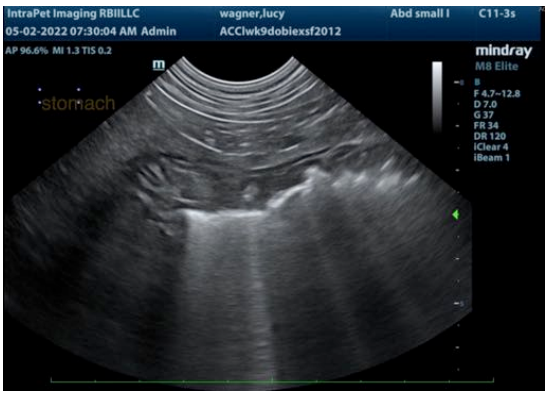
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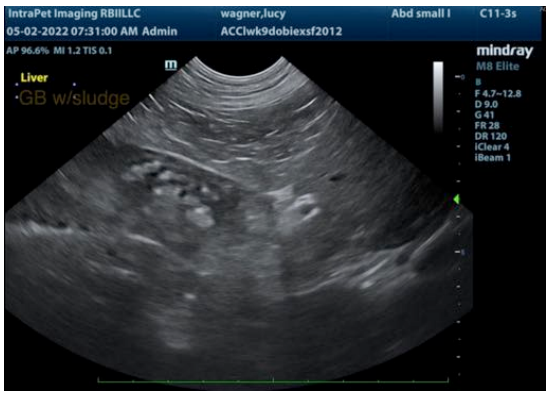
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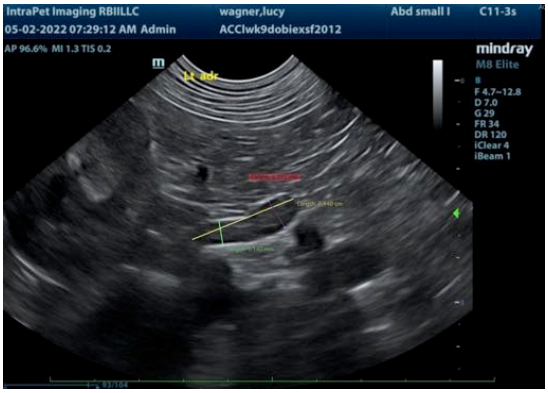

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
Lisa.Carioto@sonopath.com