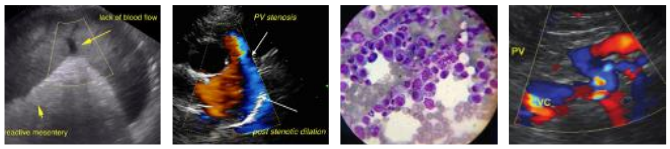


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**PATIENT**

Lilly CAH Stefanelli

**SPECIES**

Canine

**BREED**

Pug

**SEX**

Spayed Female

**AGE**

14 Years

**WEIGHT**

18 Pounds

**INTERPRETED BY**

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

**IMAGING PERFORMED BY**

Dr. Elaina Petrone

**HOSPITAL NAME**

Long Branch AH

**REFERRING VET**

Dr. Elaina Petrone

**INVOICE**

37318

**DATE**

5/3/22

## PRESENTING CLINICAL SIGNS

14 yo FS pug, well controlled diabetic, hepatomegaly and weight loss. Heart murmur-never imaged Abnormal PE/Chem/CBC/UA Results: Elevated ALT (400s) ALP 1700, GGT 300s Started on denamarin and ursodiol USG: 1.40 ACTH stim pending today

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (4.74 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.06 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

### *Adrenal Glands*

The left adrenal gland is normal in size measuring 0.82 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is normal in size measuring 0.73 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

### *Spleen*

The spleen is subjectively normal in size. The spleen echotexture is heterogenous and mildly mottled, the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There are numerous punctate, hyperechoic foci throughout the splenic parenchyma. These trend towards a more benign appearance.

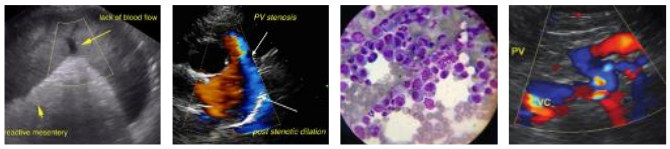
### *Liver*

The liver is large in size, and is hyperechoic with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

### *Gastrointestinal*

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is

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adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a uniform diameter with minimal fluid distension. Wall appears subjectively, mildly increased. Bowel loops follow a typical curvilinear path with distinct wall layering. Duodenum wall measured 0.34 cm. Jejunum wall measured 0.31-0.52 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

### *Pancreas*

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

### *Free Abdomen*

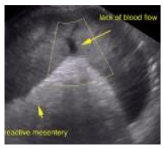
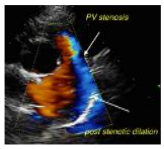
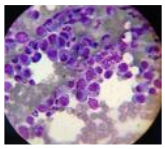
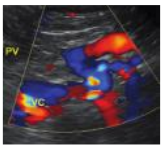
A scant triangle of free fluid is visualized near the spleen. No subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

## ULTRASONOGRAPHIC FINDINGS

- Large, hyperechoic and mildly heterogeneous liver – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.
- Mildly mottled spleen with punctate hyperechoic foci – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis. These hyperechoic foci have the appearance of a more benign lesion, although an underlying neoplastic process cannot be excluded.
- Moderate gallbladder sludge – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.
- Subjectively thickened small intestine – The mild small intestinal wall changes may be a normal variant in this patient or could be consistent with an inflammatory process (e.g., inflammatory bowel disease).
- Scant anechoic free fluid visualized

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The changes observed in the liver are most consistent with a diabetic hepatopathy. This is a very common finding in diabetic pets. Additionally, this dog has somewhat “plump” adrenals, which could be an indicator of underlying Cushing’s. This is difficult to diagnose in diabetic dogs because they are often already PU/PD and have elevated liver enzymes, etc. I would typically perform a liver function test to confirm that there is no effect on liver function, and if there is a concern for underlying round cell neoplasia, etc., you could consider a fine needle aspirate of the liver, provided coagulation

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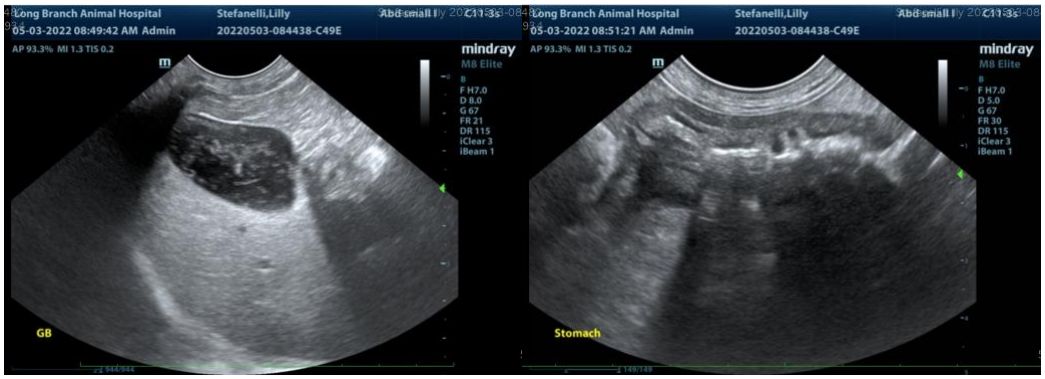
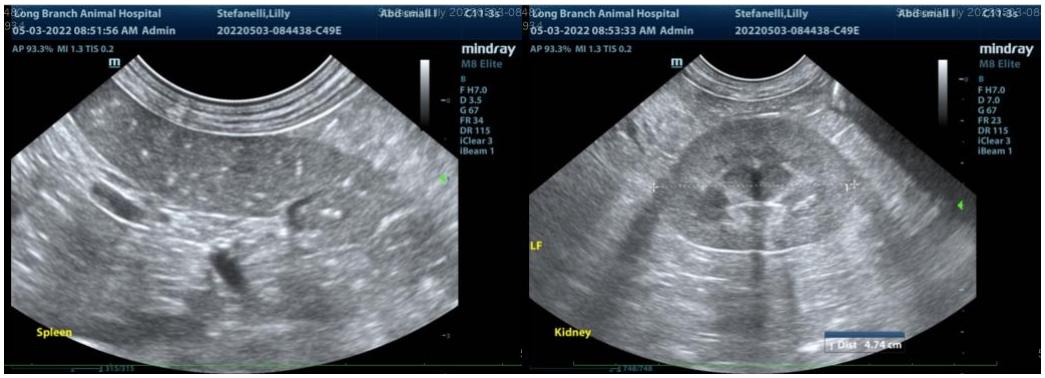
parameters are normal.

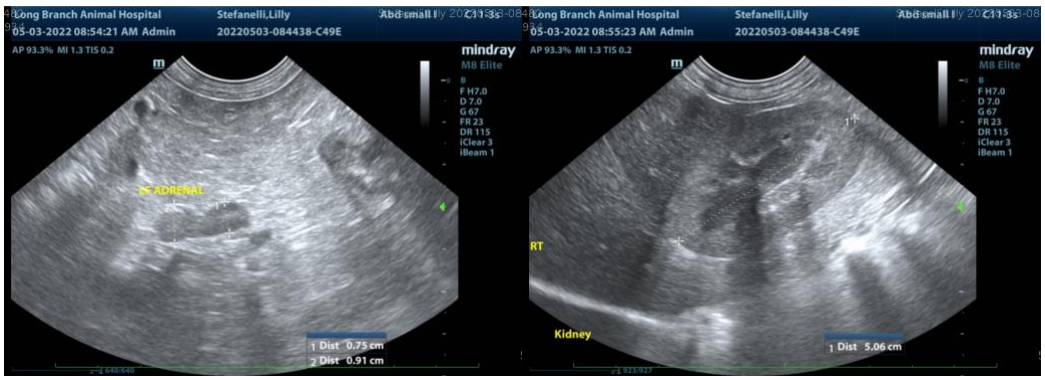
There are numerous pinpoint hyperechoic foci throughout the splenic parenchyma. This is most consistent with a benign lesion, although an underlying neoplastic process cannot be excluded. If this pet is feeling sick and not doing well, you could consider a fine needle aspirate of the spleen to rule out something more concerning.

There is moderate debris within the gallbladder, but no evidence of wall thickening or an obstructive process. Nonetheless, I would consider starting Ursodiol due to likely cholestasis.

There is a very small amount of free fluid visualized. A source for this is not readily apparent. Recommend continued monitoring.



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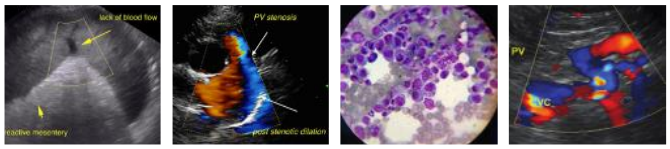

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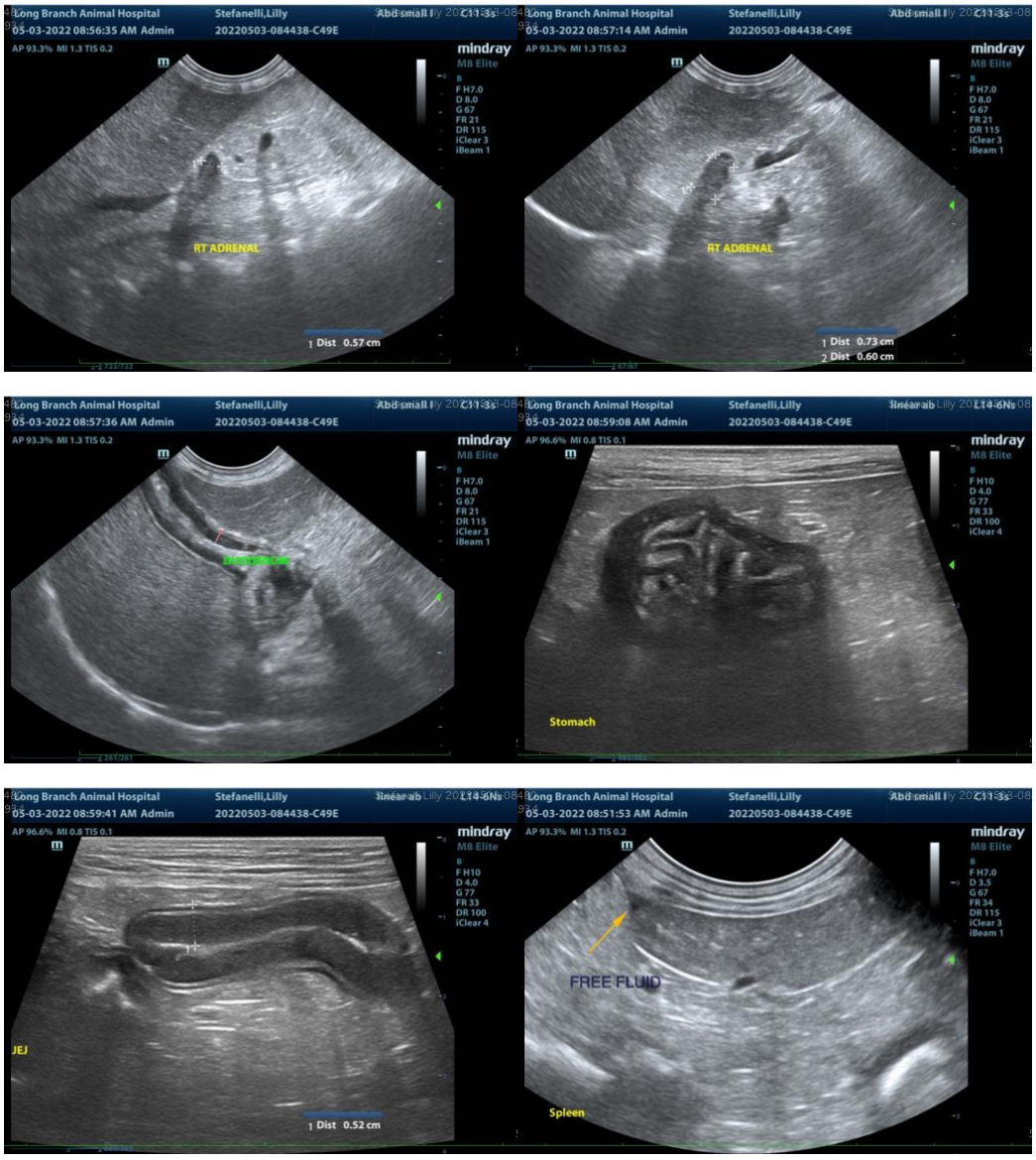


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

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