

**DATE PRESENTING CLINICAL SIGNS**

1/6/22 History: 20-year-old FS cat with hx of CRD, hypertension, recurrent pancreatitis. Recent weight loss. Newly elevated liver enzymes.

**PATIENT**

Lexie Wesner

Current Medications: SQF 100mL SID, Amlodipine 1.25mg SID (increased one week ago due to persistent hypertension), Transmucosal Buprenex 0.3mg/mL 0.2mL BID x 1 week, Cerenia 8mg SID x 1 week, Mirataz SID x 1 week, Potassium gluconate 3mEq SID.

**SPECIES**

Feline

Lab Results: fPL 17.9 (0-3.5), ALT 655 (27-158), AST 233 (16-67), BUN 60 (16-37), Creat 4.4 (0.9-2.3), TBIL 3 (0-0.3), K+ 3.4 (3.7-5.2), Monos 707 (40-530), Neut 33366 (2620 to 15170).

Date of Previous IntraPet Ultrasound: No previous IntraPet scans.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

**BREED**

Siamese

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****SEX**

Spayed Female

**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, or masses. There is a small band of dependent mineralized debris measuring 0.66 cm, most consistent with mineralized sandy debris.

**AGE**

2/8/01

The left kidney has a normal shape and size (3.15 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is severe pyelectasia/hydronephrosis measuring 1.1 cm with evidence of a dilated proximal ureter measuring 0.35 cm in diameter. No obstruction is visualized and there is no perinephric inflammation or effusion.

**WEIGHT**

8 Pounds

The right kidney has a normal shape and size (2.96 cm) with severe pyelectasia/hydronephrosis measuring 1.54 cm. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**INTERPRETED BY**

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

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.37 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.

**IMAGING PERFORMED BY**

Andi Parkinson RDMS

The right adrenal gland is normal in size measuring 0.37 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.

**HOSPITAL NAME**

Bay Country VH

**Spleen**

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There is an isolated 0.46 cm hyperechoic nodule in the cranial third of the spleen.

**REFERRING VET**

Dr. McLean

**Liver**

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

**INVOICE**

34039

The gallbladder lumen is significantly distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a small amount of mineralized dependent debris within the gallbladder,

most consistent with stones. The cystic and common bile duct appear dilated and tortuous. In the distal common bile duct, there is a faint shadowing mineralization measuring 0.35 cm, most consistent with a biliary stone. The bile duct in this area measures 0.45 cm. Findings are concerning for a biliary obstruction (partial or early complete).

### ***Gastrointestinal***

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.36cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is 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 relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Jejunum wall measured 0.26 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 large and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is evidence of regional mesenteric inflammation. Consistent with mild pancreatitis. The pancreatic duct is prominent measuring 0.21 cm.

### ***Free Abdomen***

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or 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.

## **PRIMARY FINDINGS**

- Bilateral severe pyelectasia or early hydronephrosis with left-sided hydroureter – Pyelectasia of the left/right kidney could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other. No site of obstruction is visualized.
- Prominent, hypoechoic pancreas with prominent pancreatic duct – The pancreatic changes are most consistent with mild pancreatitis/pancreatic inflammation. Recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider fine needle aspirate if not improving.
- Hyperechoic liver – Hepatic changes are non-specific and could be consistent with hepatic lipidosis, inflammatory/infectious disease, infiltrative neoplasia, or other hepatopathy.
- Moderate gallbladder distention with gall stones, moderate to severely dilated bile duct with a stone observed within the dilated duct – Findings are suggestive of partial or early complete biliary obstruction.

## SECONDARY FINDINGS

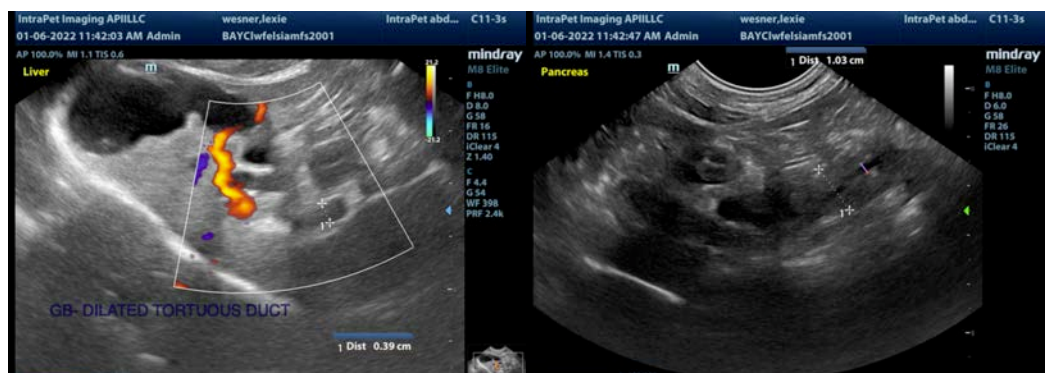
- Hyperechoic nodule within the spleen – There is a non-cavitated, hyperechoic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.
- Dependent mineralized debris in the urinary bladder – Recommend urinalysis and culture

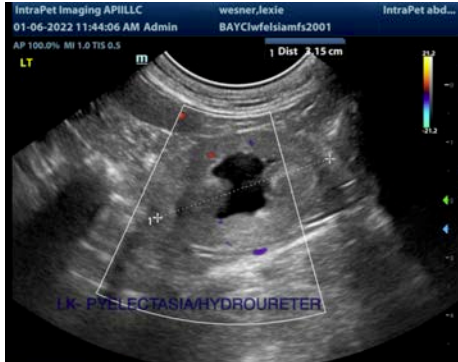
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

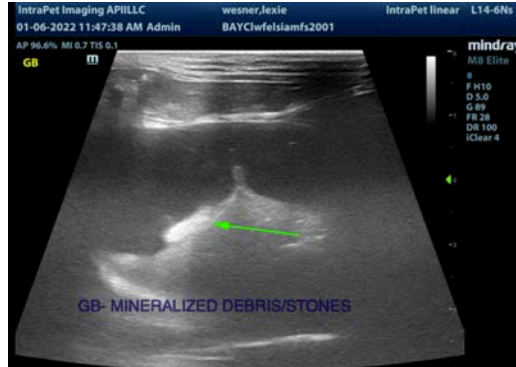
The liver enzyme elevation is likely due at least in part to a partial or complete biliary obstruction. This could be exacerbated by the inflamed pancreas. Recommend therapy for cholangiohepatitis, pancreatitis with IV fluids, pain meds, anti-nausea medications, Ursodiol and antibiotics. If liver values continue to rise, consider adding in an anti-inflammatory dose of steroids (0.5 mg/kg per day) to see if you can reduce some inflammation and pass the biliary stone.

If gallbladder distention progresses and liver enzymes are rising, then surgical evaluation may need to be considered, but I suspect this has been a chronic intermittent ongoing problem, and I'm hopeful that the stone may not be causing a complete obstruction. Additionally, there is severe bilateral pyelectasia. No obvious obstruction is visualized. Recommend urinalysis and culture to screen for pyelonephritis, and continued monitoring of the kidneys and renal values to look for progressive dilation. If renal values are worsening and dilation is progressing, then consider a contrast CT scan to look for a possible area of obstruction.

The changes visualized in the liver, spleen and urinary bladder are relatively mild. At this point consider continued monitoring while the primary issues are addressed. A fine needle aspirate of the liver could be considered to rule out round cell neoplasia as a factor in the biliary obstruction.







**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.

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