



**PATIENT**

Joy Minnick

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Spayed Female

**AGE**

12

**WEIGHT**

9

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Tasha

**HOSPITAL NAME**

Dillsburg Vet Clinic

**REFERRING VET**

Dr. Jacobs

**INVOICE**

45895

**DATE**

3/15/23

**PRESENTING CLINICAL SIGNS**

Hx of Cushing's disease (dx 3/20/20), diabetes mellitus (dx 10/30/20), hypothyroidism (dx 8/10/20), and hypertension. Grade 3/6 left systolic murmur. P currently on 2 units vetsulin q12h, 15 mg trilostane (0.75 tab q24h), 0.1 mg thyrotabs q12h, amlodipine 2.5 mg q24h. P has been well controlled for endocrine diseases. 2 weeks ago o noticed p was becoming inappetent. Since then, slowly progressing to anorexia. P did not eat last night or this morning, o did not give insulin since yesterday morning. Vomited last night once, this morning twice.

Abnormal PE/Chem/CBC/UA Results: On PE, p lethargic, mild abdominal pain on palpation. Very mild icterus of sclera, subjective. CBC: LYM 0.66, PLT 596 Chem: Glob 4.0, Glu 489, Chol >450, ALT too high to count, AST too high to count, GGT 272, Tbili 2.9, Chol >450, Trig 479, Na 140, Cl 98 Ketones on urine dipstick: Negative

**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 (3.51 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal 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 (3.16 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal 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 0.60 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 0.45 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, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

**Liver**

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

The gallbladder lumen is significantly distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. The intraluminal material appears to be shadowing and irregular, most



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consistent with numerous variably sized irregular cystoliths. The gallbladder neck and the proximal bile duct appear dilated with a large amount of intraluminal debris. The bile duct appears to taper more distally and measures 0.62 cm at the level of the duodenal papillae with some persistent intraluminal debris.

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**Gastrointestinal**

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

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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. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.)

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Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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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**

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

**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.

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**ULTRASONOGRAPHIC FINDINGS**

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- Prominent, mottled pancreas – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Distended gallbladder with numerous shadowing intraluminal cystoliths as well as moderate bile duct dilation with intraluminal debris – Findings are concerning for a partial biliary obstruction/cholecystitis.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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No focal lesions are visualized associated with the liver, and the parenchyma appears relatively normal. The gallbladder is distended with numerous hyperechoic irregular foci, most consistent with intraluminal choleliths. Additionally, the bile duct is somewhat dilated and tortuous with some echogenic debris within. These findings are concerning for a possible biliary obstruction and cholecystitis, although a primary hepatopathy cannot be definitively ruled out. Recommend treatment for cholecystitis with antibiotics, pain medications, nausea medications, fluids, and Ursodiol. Consider serial monitoring of the gallbladder and bile duct, and correlate these findings with abdominal radiographs, looking for any evidence of mineralizations more distally, which could represent stones within the bile duct. Additionally, a fine needle aspirate of the liver could be considered to look for any evidence of a primary hepatopathy.

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The pancreas is visible but does not appear overtly inflamed, but if symptoms persist despite treatment for diabetic ketoacidosis and a possible biliary obstruction, consider reimaging of the pancreas, as inflammation can become more apparent at the time.

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Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.

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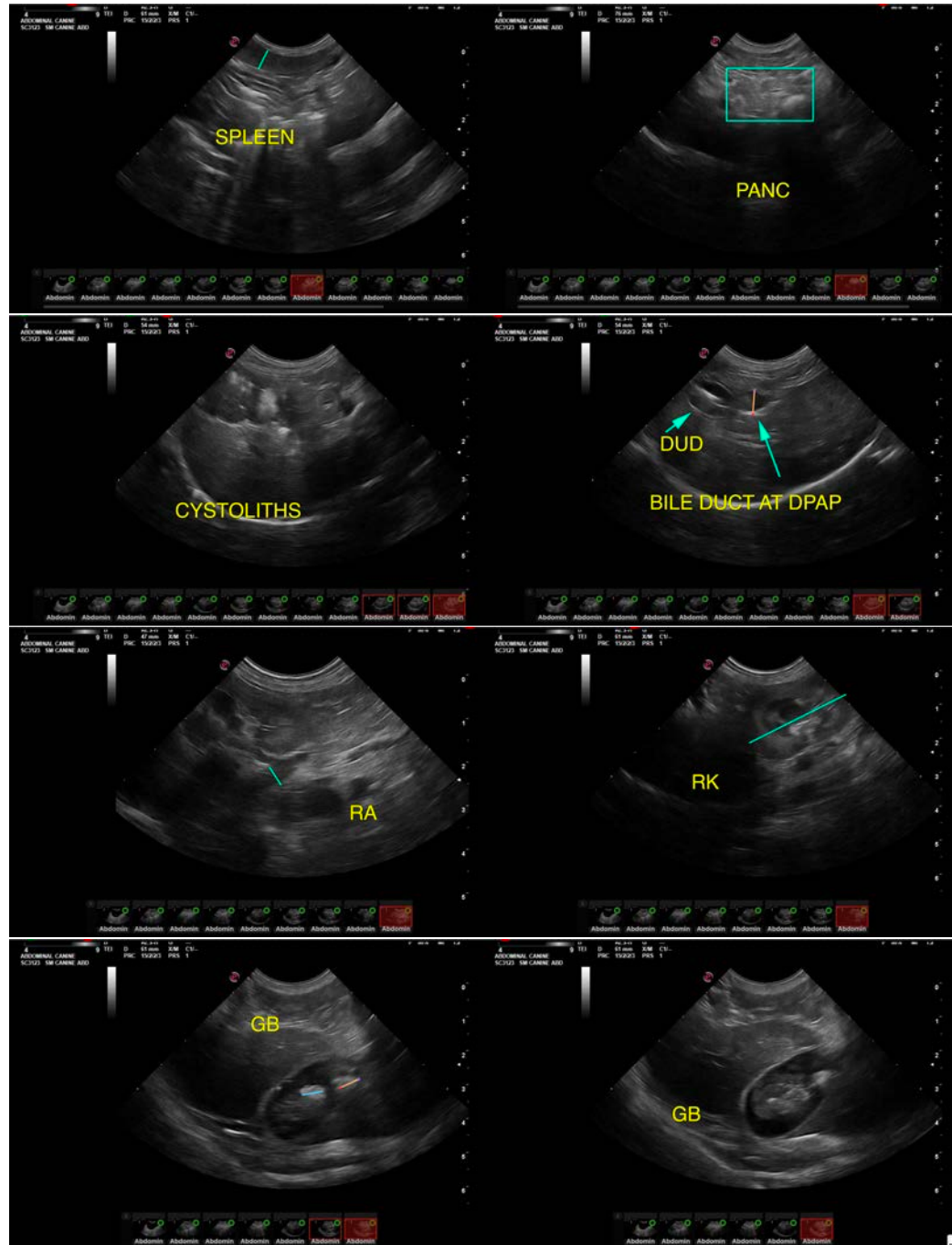
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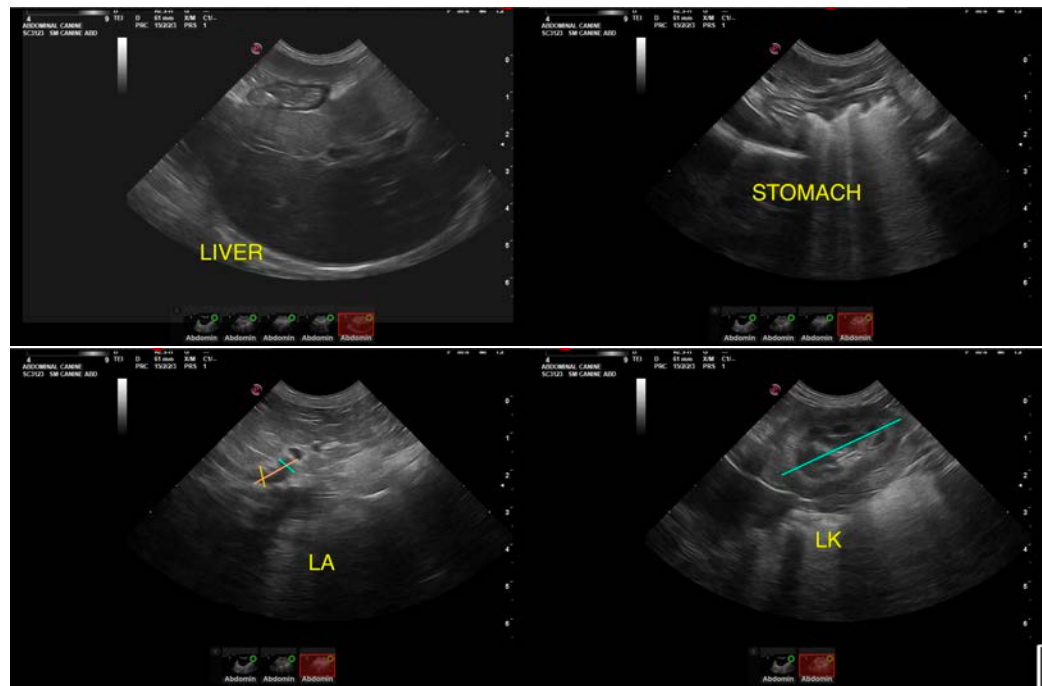
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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