



**PATIENT**

Katee Brown

**PRESENTING CLINICAL SIGNS**

DOB 6/1/09 FS Shih tzu BW 12.4# Presented 9/27/21 for lethargy, moaning, vomiting, inappetence, urinary incontinence, owner feels her abdomen is distended. Only defecating every other day, stools normal. Salivating excessively, grade 2 dental disease. History of collapse in January 2021. Cardiac ultrasound performed at that time. No significant abnormalities detected so collapse not deemed cardiac in origin. PE mildly enlarged salivary glands bilaterally. abdominal xrays didn't reveal anything obvious. Temp normal no weight loss. Sent blood work and xrays

**SPECIES**

Canine

**BREED**

Shih Tzu

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**SEX**

Spayed Female

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.

**AGE**

12 Years

The left kidney has a normal shape and size (3.7 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.

**WEIGHT**

12.4 Pounds

The right kidney has a normal shape and size (2.5 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.

**INTERPRETED BY**

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

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.46 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**

Loetitia Saint-Jacques, RVT

The right adrenal gland is normal in size measuring 0.61 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**

Sierra Animal Wellness

**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.

**REFERRING VET**

Dr. Peggy Roberts

**Liver**

The liver is subjectively normal in size, and echogenicity 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.

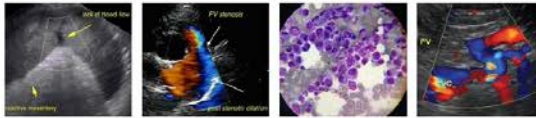
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The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a mild amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

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Katee Brown **Gastrointestinal**

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**WEIGHT**

12.4 Pounds

The stomach is moderately dilated with fluid and irregular shadowing material. It generally measures at a normal thickness of approximately 0.4 cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is generally adequate and there is no impression of reduced peristaltic activity. In the area of the pylorus, at the outflow tract, there appears to be excessive tissue with a 1.2 cm rounded structure that appears to be occupying the lumen of the pylorus. This structure has the same echogenicity as mucosal tissue and does not shadow. The diameter of this area of pylorus is 2.2 cm with a 0.59 cm pyloric wall. This is suspicious for a partial or complete gastric outflow obstruction. Evaluation prior to vomiting would aid in visualization (pet vomited at beginning of scan).

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 0.53 cm. Jejunum wall measured 0.38 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 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.

**Other**

A brief view of the heart was submitted. No pericardial effusion was seen.

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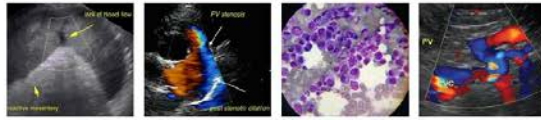
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**PRIMARY FINDINGS**

- Soft tissue structure observed within the pyloric lumen – differentials include hypertrophic tissue, normal rugal fold, or mass effect (benign or cancerous growth/polyp). There is concern that this could be causing partial or complete obstruction.
- Mildly 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).
- 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.



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**SECONDARY FINDINGS**

- Mild gallbladder sludge – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.
- Mottled, prominent pancreas – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.

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Shih Tzu

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The images reveal excessive tissue in the area of the pyloric lumen. When there is greater gastric distention, there is the possibility that this is not a significant finding. I would expect more of a chronic vomiting history with an obstructive mass effect. Nonetheless, this could represent a mass effect or hypertrophic tissue and should be further evaluated with surgery or endoscopy. You could also consider administering a relatively small amount of barium to outline the gastric wall and see if it aids in diagnosis.

**SEX**

Spayed Female

The small intestine is subjectively mildly thickened, and the pancreas is slightly prominent. Consider a GI panel with quantitative PLI, B12 and folate to further evaluate the pancreas and small intestine.

**AGE**

12 Years

The liver enzymes are mildly elevated. This could be monitored or you could consider a liver function test to further evaluate. Electrolyte changes consistent with a chronic gastric outflow obstruction are not present. If salivary glands are truly swollen, some of the reported symptoms could also be due to sialadenitis/osis. Fineneedle aspirate of the salivary gland with cytology could be considered if this is the case.

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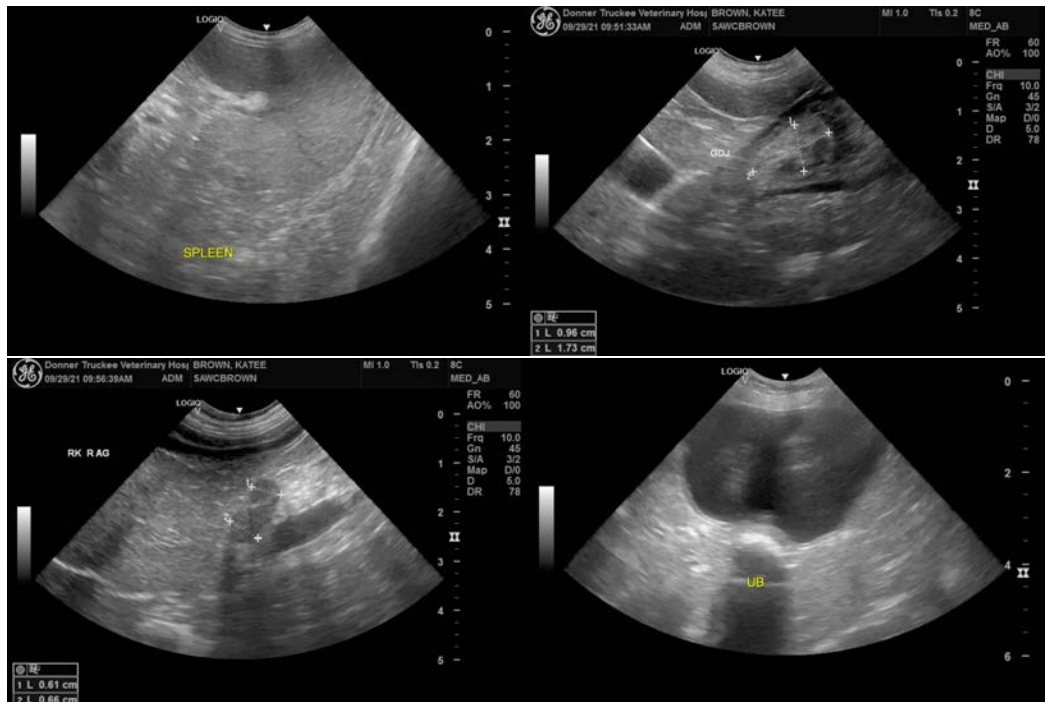
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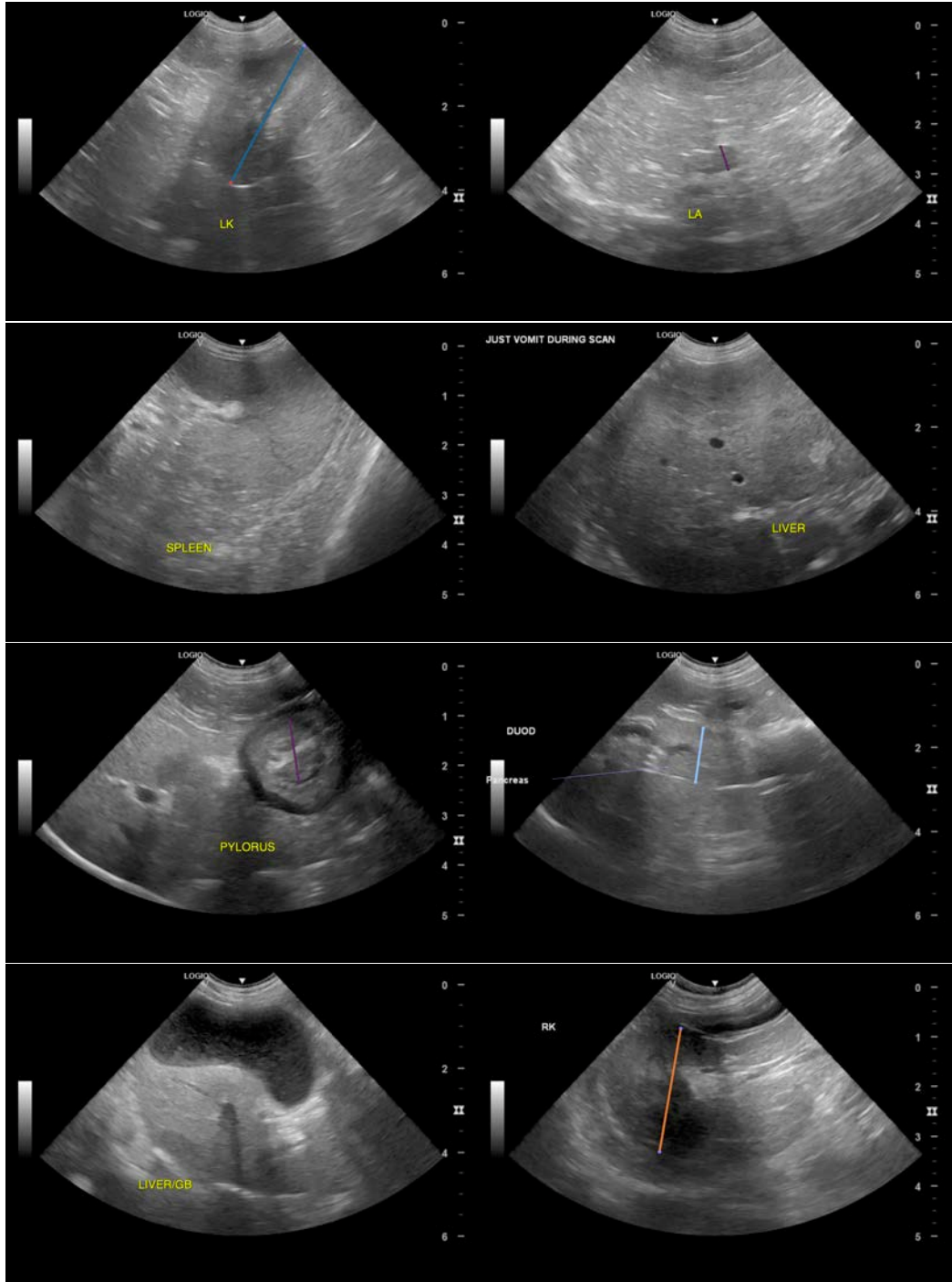
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

**SPECIES**

Canine

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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Shih Tzu

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

kathleen.sennello@sonopath.com

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