



**PATIENT**

Bella Beck

**SPECIES**

Canine

**BREED**

Mixed

**SEX**

Spayed Female

**AGE**

11 Years

**WEIGHT**

23.4 Pounds

**INTERPRETED BY**

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

**IMAGING  
PERFORMED BY**

Kelly Vazquez

**HOSPITAL NAME**

The Venturing Vet

**REFERRING VET**

Dr. Marisa Herzog

**INVOICE**

45595

**DATE**

3/1/23

**PRESENTING CLINICAL SIGNS**

Patient presents for ALT of 403, 2 weeks ago patient was vomiting and had diarrhea for a few days, picky eater but now improved. 1 day prior to ultrasound the patient started Denamarin.

Abnormal PE/Chem/CBC/UA Results: ALT 403.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder is mildly distended with anechoic urine. The Bladder wall is diffusely mildly thickened (0.45 cm), and the mucosa is mildly irregular. The trigone, ureteral papillae, and visible urethra (to a depth of 2cm) appear normal with no evidence of severe mucosal irregularities, masses or cystic calculi. Findings are most consistent with bacterial cystitis or lack of urine distension. Recommend urinalysis and culture.

The left kidney has a normal shape and size (4.3 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 (3.25 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 0.45 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 0.43 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 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 gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. There is minimal debris present, but in the dependent portion there is a small accumulation of hyperechoic debris, most consistent with sandy debris or small stone. The cystic and common bile ducts are normal/not visible.



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**Gastrointestinal**

The stomach is moderately dilated with fluid and irregular shadowing material most consistent with normal ingesta and gas. 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 layering 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 measures 0.31 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**

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.

**ULTRASONOGRAPHIC FINDINGS**

- Thickened, slightly irregular urinary bladder wall – The bladder mucosal changes could be consistent with cystitis or artifactual due to lack of adequate luminal distension. Bladder neoplasia cannot be ruled out but is considered unlikely in this patient.
- 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.
- Small amount of hyperechoic debris in the dependent portion of the urinary bladder – Findings are most consistent with sandy debris or small stones.
- Moderate ingesta visualized within the gastric lumen – Correlate with feeding history. If the patient was adequately fasted, consider such differentials as delayed gastric emptying or a partial outflow tract obstruction (none observed).

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

No focal lesions are visualized associated with the liver or gallbladder. There is a small amount of hyperechoic debris visualized within the gallbladder, but the gallbladder wall appears normal and this is likely an incidental finding at this time.

Additionally, the gastrointestinal tract appears relatively normal other than there being a moderate amount of ingesta visualized within the gastric lumen. If the GI symptoms have resolved, the previous episode of vomiting and diarrhea could have been non-specific gastroenteritis. There is also a possibility



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that the ALT elevation was in response to this (reactive). Consider recheck of the ALT after the resolution of the GI signs (if this has not already been done).

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If the ALT elevation is persistent, consider the following:

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- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc...

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- Consider PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history

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- If not already done, consider pre and post prandial bile acids to evaluate liver function

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- If the ALP is significantly elevated relative to the ALT and symptoms consistent with Cushing's are present, consider adrenal function testing (ACTH stim)

Additionally, the urinary bladder wall appears slightly thickened and irregular, although this could be partially artifactual due to lack of significant urine distention. Recommend urinalysis and culture, looking for possible cystitis.

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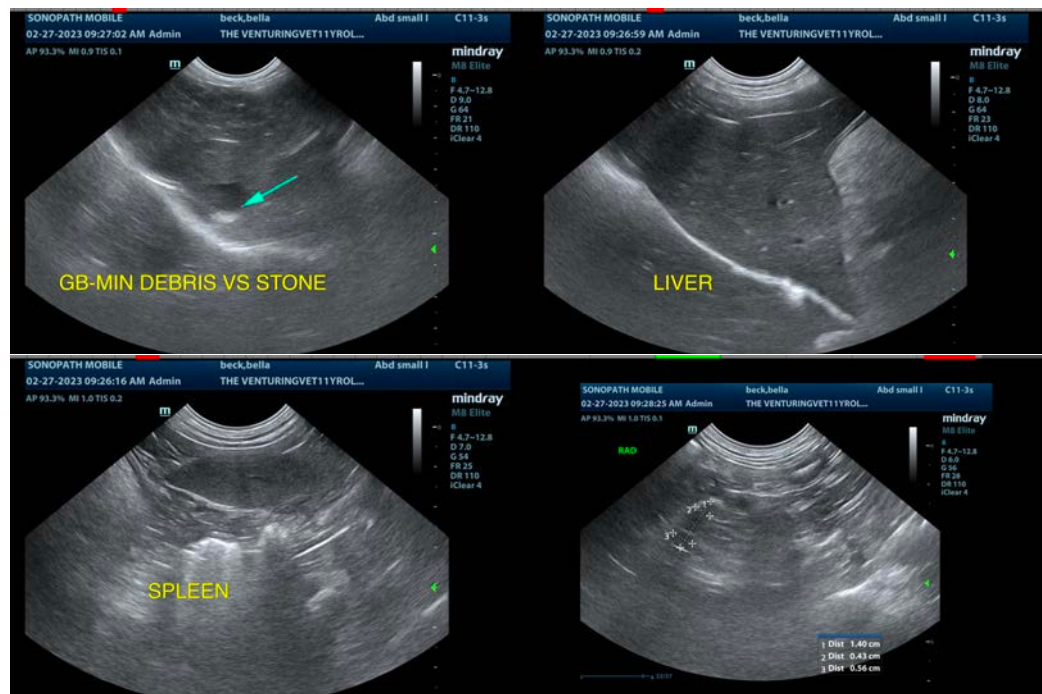
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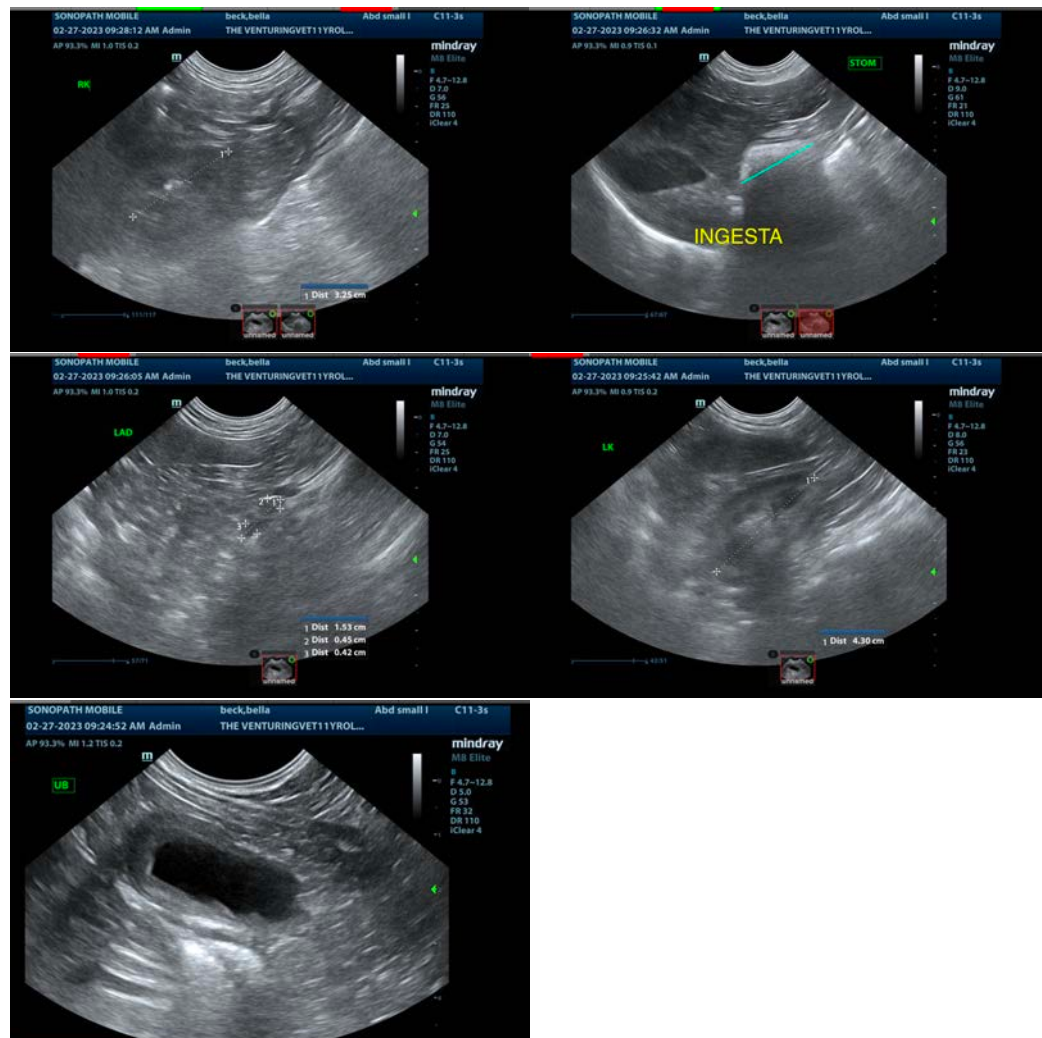
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

kathleen.sennello@sonopath.com