



**PATIENT**

Molly Crockett

**SPECIES**

Canine

**BREED**

Schnauzer

**SEX**

Spayed female

**AGE**

10 years

**WEIGHT**

14.34 lbs

**INTERPRETED BY**

Dr Brittany Sinclair,  
BVSc(hons), DACVECC

**IMAGING PERFORMED BY**

Ashley Whitesell

**HOSPITAL NAME**

Dickson AC

**REFERRING VET**

Dr. Hovis

**INVOICE**

42181

**DATE**

1/17/23

**PRESENTING CLINICAL SIGNS**

History: Vomiting yellow bile past week, on GI diet and stomach protectors  
Abnormal PE/Chem/CBC/UA Results: ALKP 246 all else WNL x-ray- intestines looked thickened

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder, trigone, and visible pelvic urethra were of normal thickness. The ureters were not visible which is normal. There was normal wall layering with no masses, uroliths or abnormal thickening visualized. Urine was anechoic. No evidence of inflammatory or neoplastic changes were noted.

The kidneys have a smooth capsule and with hazing of corticomedullary definition to the point of inability to determine cortical/medullary ratio. No evidence of pelvic dilation was present. Pinpoint areas of cortical mineralization in left kidney, non-obstructive nephroliths in right kidney. The left kidney measured 4.3 cm. The right kidney measured 4.2 cm.

**Adrenal Glands**

The left adrenal gland was visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left adrenal gland 1.62 cm in length and 0.44 cm at the cranial pole and 0.57 cm at the caudal pole. The region of the right adrenal gland was unremarkable.

**Spleen**

A 1.4x 1.0 cm slightly irregular splenic mass in body of spleen with heterogenous echotexture with hypoechoic cystic areas and somewhat poorly defined cranial border, causing capsular bulging. Similar appearing 0.44x0.44cm nodule located more cranially without capsular disruption.

**Liver**

he liver is subjectively normal in size with slight rounding of lobes\* and the parenchyma contains multifocal variably sized hypoechoic nodules and a coarse appearance. No specific masses are visualized. Vascular and biliary tracts are of normal volume with no evidence of congestion. No pathological hepatic lymphadenopathy observed. The gall bladder is moderately distended with anechoic fluid, with hyperechoic non-shadowing debris present. Gall bladder walls are normal thickness but slightly hyperechoic. There is no surrounding free fluid.

**Gastrointestinal**

The stomach contains minimal luminal contents. It measures at a normal thickness of 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



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maintaining the typical 1:3 muscularis:mucosa layer ratio. 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.

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***Pancreas***

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The base and limbs of the pancreas were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour and parenchyma were normal. No overt evidence of active inflammatory or neoplastic disease was noted.

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***Lymph Nodes***

No clinically significant lymphadenopathy or abnormalities noted.

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***Free Abdomen***

No masses or free fluid were noted.

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**ULTRASONOGRAPHIC FINDINGS**

**Primary Findings**

1. Splenic mass and nodule
2. Liver nodules
3. Gall bladder debris with mild cholangitis
4. Degenerative renal changes with mineralization

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

No definitive cause of GI signs is noted though mild elevation in ALKP and hyperechoic gall bladder wall are consistent with cholangitis which may be the underlying cause. Treatment with antibiotics (clavamox, or enrofloxacin) could be considered to cover for bacterial cholangitis. Mild fluid accumulation in stomach may reflect decreased emptying and a prokinetic such as metoclopramide or cisapride may help alleviate clinical signs. Remainder of GI tract and visible pancreas were within normal limits. Empiric treatment for GI signs including anti-nausea, appetite stimulant and fluid support as clinically indicated is warranted. A diet trial with hydrolyzed protein or select protein diet could be considered if food sensitivity is suspected clinically. If signs are persistent or recurrent, additional diagnostics to be considered include GI panel (TLI/PLI/cobalamin/folate), fecal pathogen panel, thyroid testing, bile acid profile, and thoracic radiographs to rule out occult neoplasia, cardiac disease and esophageal disease as potential causes.

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Splenic parenchymal changes are consistent with a mass effect and separate smaller nodule and are concerning for infiltrative disease which may be malignant neoplasia (HSA, lymphoma, histiocytic



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sarcoma, other) or benign (hematoma, hemangioma, regenerative nodules, reactive nodules, other). Splenic aspirate is recommended to further define.

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Liver changes are most consistent with a vacuolar hepatopathy, though this diagnosis cannot be definitively made with ultrasound imaging alone. Vacuolar degeneration is a common nonspecific indicator of hepatocyte injury which is most commonly secondary to exogenous steroid exposure, hyperadrenocorticism, or an idiopathic age related change, though other endocrinopathy (hypothyroidism), infectious or inflammatory hepatitis (bacterial, viral, auto-immune other), and neoplasia among other things remain possibilities. Given the parenchymal changes in the spleen, neoplasia is of higher concern. In the face of elevated liver enzymes liver aspirate is recommended to further characterize these ultrasonographic changes.

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Renal changes are likely age-related degeneration. Correlate clinical significance with blood work/urinalysis findings and clinical signs.

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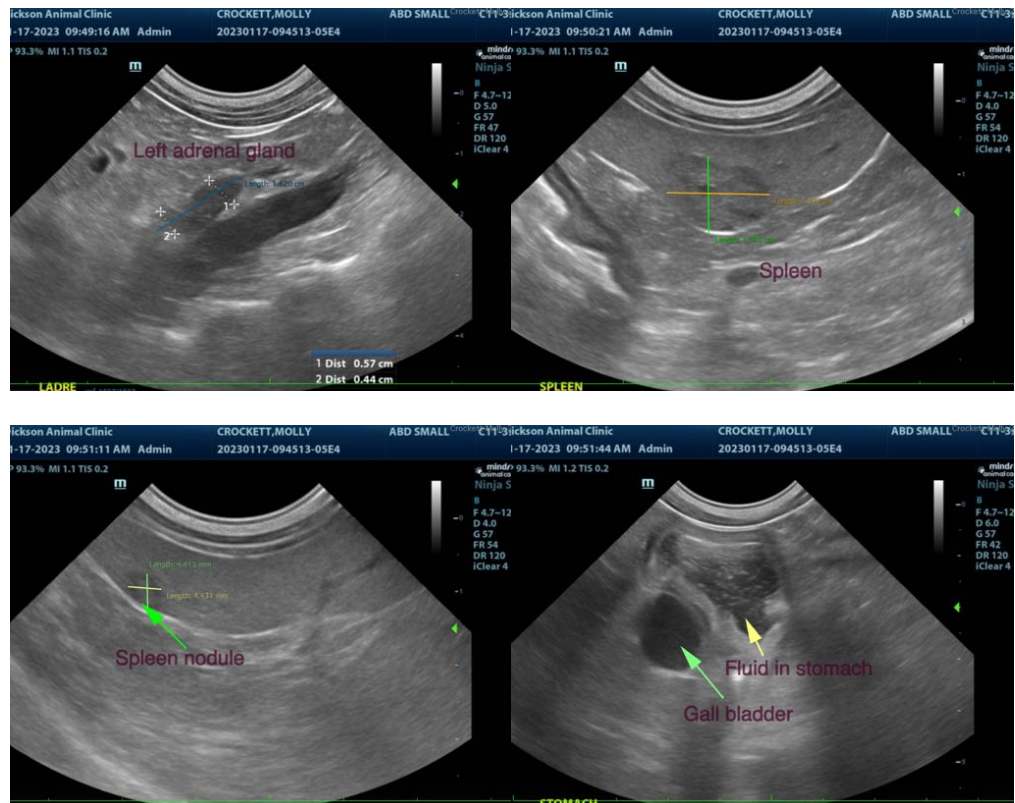
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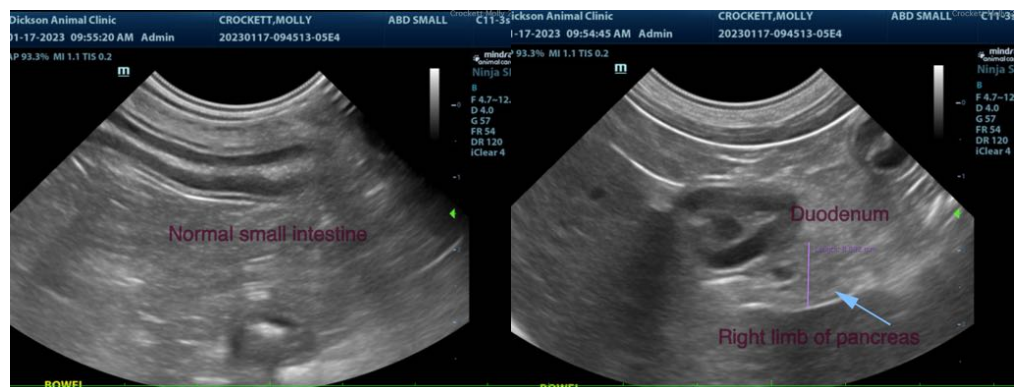
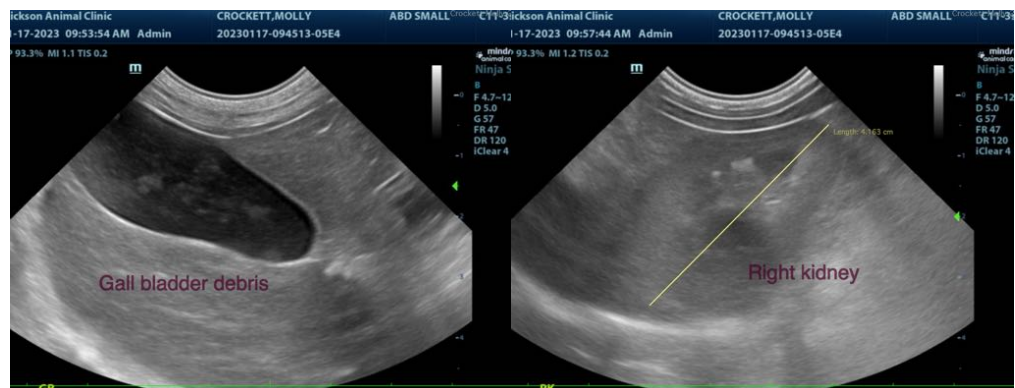
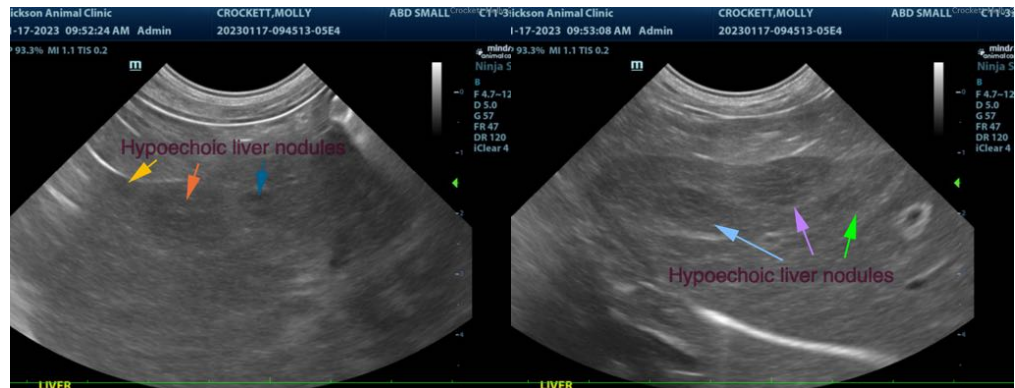
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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