

**DATE PRESENTING CLINICAL SIGNS**

1/5/22

History: visits):\_u/s in September 2021 – heterogenous changes to liver, sludge in GB. Presented 01/04/22 for acute shaking, hunching - initially concern for back pain, abd. comfortable on palpation; lab work 1/4 showed significantly elevated liver values, GGT, bilirubin since last lab work. Recheck 1/5 per dvm rec. - icterus noted 1/5, otherwise no changes since yesterday's exam; brief u/s showed sludge in GB but did not appear to be mucocele at that time.

**PATIENT**

Tiny Bickford

**SPECIES**

Canine

**BREED**

Terrier X

**SEX**

Spayed Female

**AGE**

1/6/22

**WEIGHT**

14.2 Pounds

**INTERPRETED BY**

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(Small Animal Internal  
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**IMAGING PERFORMED BY**

Stephanie Pearce  
RDMS, RVT

**HOSPITAL NAME**

Everhart VC

**REFERRING VET****INVOICE**

34006

**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 (4.31 cm) with pyelectasia at 0.23 cm and small cortical cysts. 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 hydronephrosis. Renal vasculature is normal.

The right kidney has a normal shape and size (4.54 cm) with mild pyelectasia at 0.19 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 pyelectasia, nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.59 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 0.55 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 and the echotexture is homogenous. The splenic capsule is smooth with no visible irregularities. Rare discrete focal hyperechoic, perivascular parenchymal abnormalities are present. The appearance of these lesions is most consistent with benign splenic myelolipomas. The blood flow through the hilus and splenic parenchyma appears normal.

**Liver**

The liver is large in size, and normal in 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 gall bladder lumen is significantly distended. Some areas of the wall appear mildly thickened with adherent debris (measures at 0.3 cm). There is a large amount of primarily non-organized echogenic debris and shadowing debris consistent with mineralized stones present. Additionally, there is some inflammation surrounding the gallbladder and a possible very small amount of free fluid. There is no evidence of bile duct dilation visualized. These changes can be consistent with an early gall bladder mucocele.

### ***Gastrointestinal***

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.

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.) 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**

- Distended gallbladder with thickened wall, adherent debris and stones, and a possible small amount of surrounding fluid. Findings are concerning for progression of the gallbladder disease previously visualized. Consider surgical evaluation.
- 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. Stable from the last scan.
- Decreased corticomedullary distinction in both kidneys with bilateral pyelectasia – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. Pyelectasia of the left/right kidney could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other. This is stable from the last scan.

## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The significant change from the previous scan performed 9/2/21 is progression of the gallbladder disease.

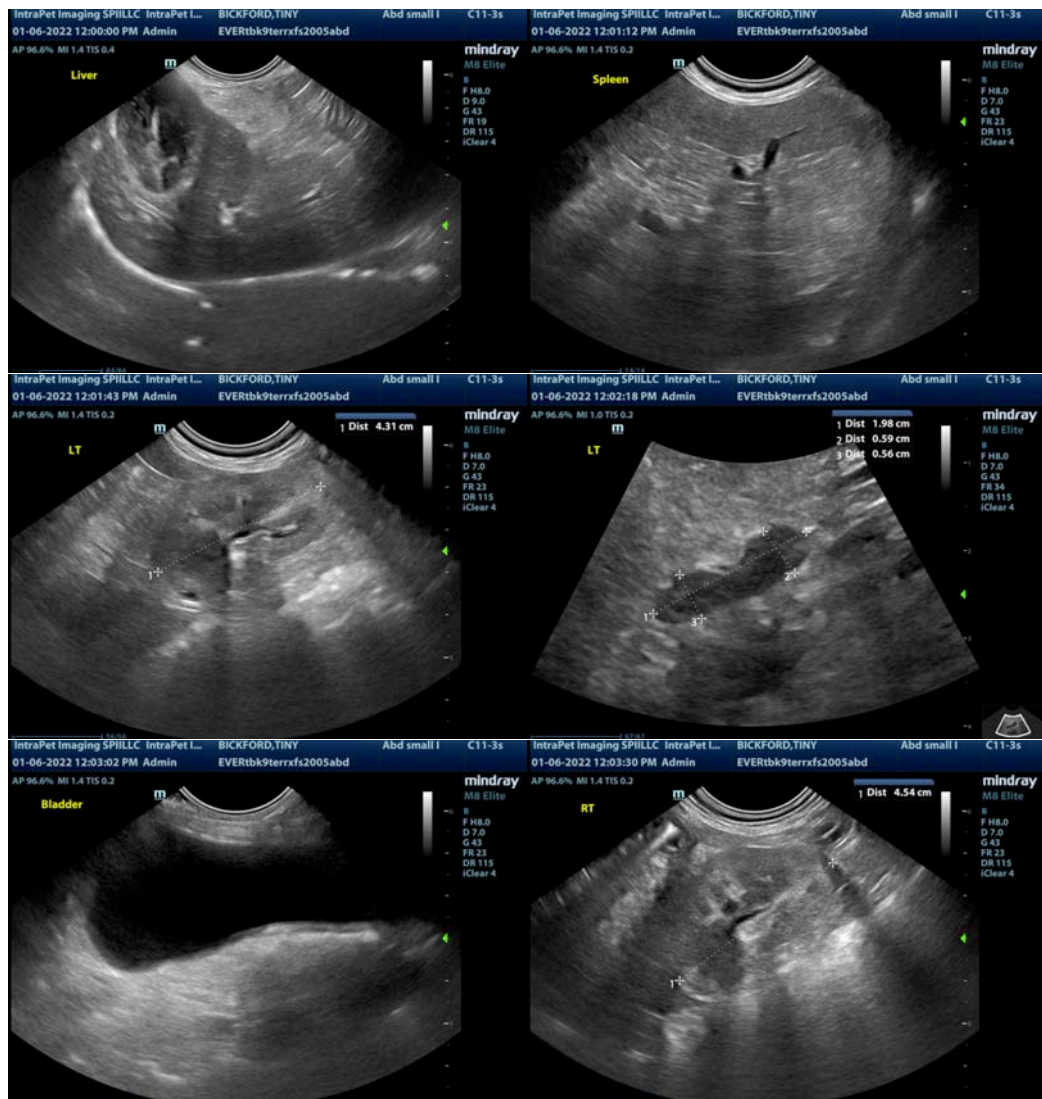
In today's scan, the gallbladder wall appears more thickened, and on some views there is a scant amount of free fluid surrounding the gallbladder, which causes concern for possible rupture. The gallbladder itself only

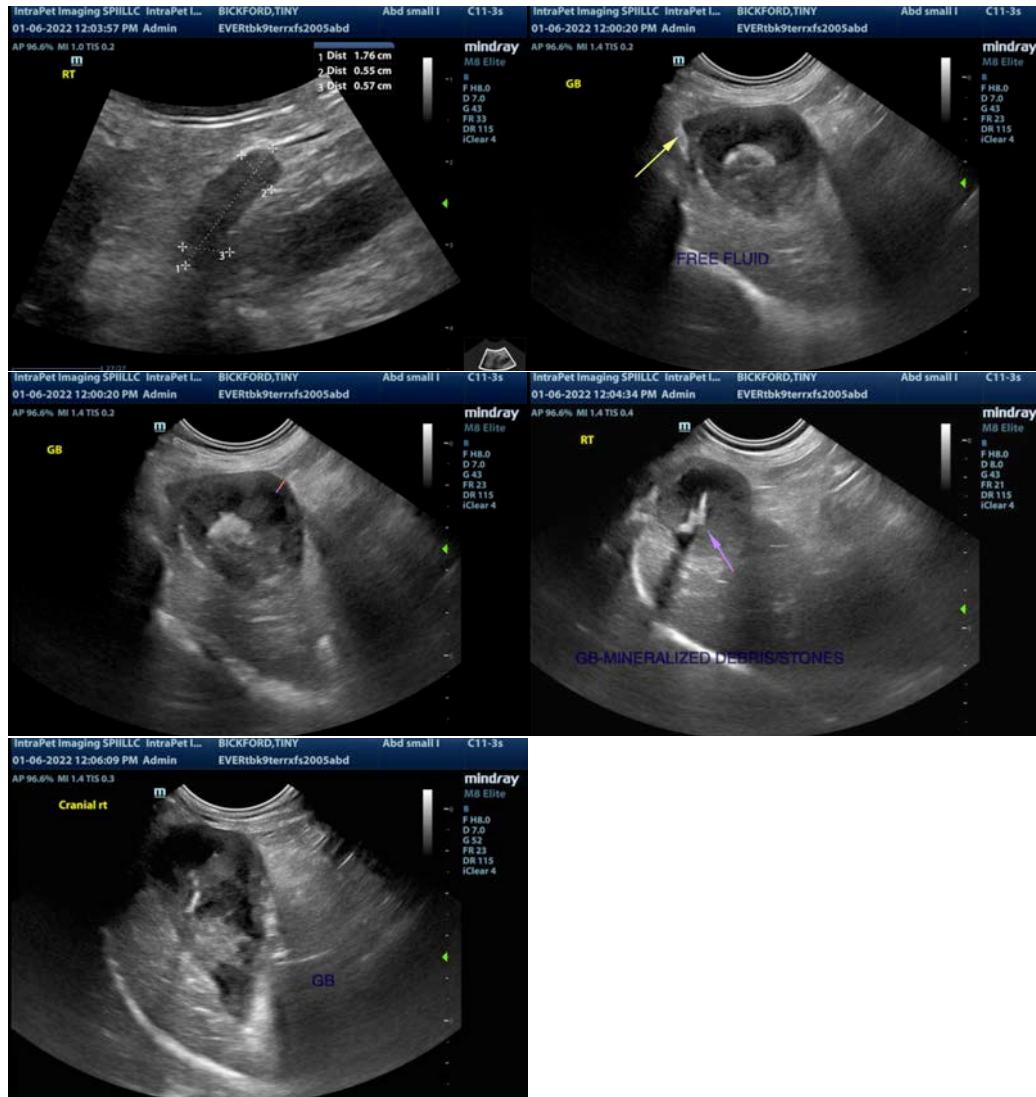
looks moderately worse, but the free fluid and the significant progression of liver enzymes is concerning.

Consider referral to a veterinary surgeon for liver biopsy and evaluation of the gallbladder for removal.

Recommend coagulation parameters and 3-view thoracic radiographs prior to surgery. The liver and kidney changes appear fairly stable.

The hyperechoic rounded structure cranial to the bladder previously seen was not visualized on today's scan.





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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