



**PATIENT**

Kwa Kwa Park

**PRESENTING CLINICAL SIGNS**

History: Grade 3/6 systolic heart murmur and elevated ALT.  
Abnormal PE/Chem/CBC/UA Results: ALT 168.

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**BREED**

Yorkshire Terrier

Urinary bladder is adequately distended with anechoic contents. No masses or inflammatory changes are observed. Several echogenic, suspected mineral, but without shadow densities suspended within the lumen measured between 0.47 cm and 0.52 cm in diameter. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

**SEX**

Spayed female

Left kidney is normal is size (3.21 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. Non-obstructive areas of mineralization/nephroliths are noted here is no evidence of pyelectasia or infarcts observed.

**AGE**

13 years

Right kidney is normal is size (3.02 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. Non-obstructive areas of mineralization/nephroliths are noted. There is no evidence of pyelectasia or infarcts observed. A 0.6 cm cortical cyst was noted in the caudal pole of the right kidney.

**WEIGHT**

5.9 lbs

**Adrenal Glands**

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

Left adrenal gland is normal in size (1.27 cm long, 0.61 cm at cranial pole and 0.39 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

Right adrenal gland is normal in size (1.4 cm long, 0.9 cm at cranial pole and 0.37 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

**IMAGING PERFORMED BY**

Kelly Vazquez, CVT

**HOSPITAL NAME**

Animal General on Hudson

**Spleen**

Spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

**REFERRING VET**

Dr. Ng

**Liver**

**INVOICE**

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Liver is subjectively enlarged (swollen contour) without disruption of architecture. It has a normal homogenous echotexture. Parenchyma is diffusely hyperechoic characterized by less prominent than normal portal vein walls and increased echogenicity relative to the spleen and falciform fat. In the nearfield, along the liver near the body wall there is a 2.8 cm long, 0.7 cm thick, hyperechoic homogenous density that could be pronounced fat i.e. falciform fat; however, a hyperechoic liver nodule is suspected. Visible vasculature and biliary tree appear normal without distension or congestion.

**DATE**

10/12/22



<b>PATIENT</b>	Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. A mineral and cholecystitis are present. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.
Kwa Kwa Park	
<b>SPECIES</b>	<b>Gastrointestinal</b>
Canine	The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of obstruction, foreign material or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. Pyloric outflow tract appears patent.
<b>BREED</b>	
Yorkshire Terrier	The visible small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.
<b>SEX</b>	
Spayed female	The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.
<b>AGE</b>	
13 years	<b>Pancreas</b>
<b>WEIGHT</b>	The observed pancreas appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.
5.9 lbs	
<b>INTERPRETED BY</b>	<b>Free Abdomen</b>
Beth Johnson, DVM DACVIM	There is no evidence of peritoneal effusion or apparent lymphadenopathy noted in these images.
<b>IMAGING PERFORMED BY</b>	<b>ULTRASONOGRAPHIC FINDINGS</b>
Kelly Vazquez, CVT	<b>Primary Findings</b>
<b>HOSPITAL NAME</b>	<b>Hypoechoic hepatomegaly</b> – This appearance is consistent with an acute hepatopathy or acute cholangiohepatitis. Infiltrative neoplasia (round cell neoplasia) should also be considered.
Animal General on Hudson	<b>Liver nodule</b> – Differentials for a discrete liver nodule include primarily benign changes such as nodular hyperplasia, fibrosis of an old hematoma, granuloma, etc.; however, while considered less likely, primary hepatic neoplasia, infiltrative round cell neoplasia and metastatic disease can mimic benign lesions and cannot be definitively ruled out.
<b>REFERRING VET</b>	<b>Gallbladder debris with cholecystitis</b> - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.
Dr. Ng	<b>Urinary bladder density</b> concerning for mildly or non-shadowing cystoliths and non-obstructive nephrolithiasis in the kidneys.
<b>INVOICE</b>	<b>Non-obstructive nephrolithiasis</b> in the kidneys.
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<b>DATE</b>	
10/12/22	



**PATIENT**

Kwa Kwa Park

**SPECIES**

Canine

**BREED**

Yorkshire Terrier

**SEX**

Spayed female

**AGE**

13 years

**WEIGHT**

5.9 lbs

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**IMAGING PERFORMED BY**

Kelly Vazquez, CVT

**HOSPITAL NAME**

Animal General on Hudson

**REFERRING VET**

Dr. Ng

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

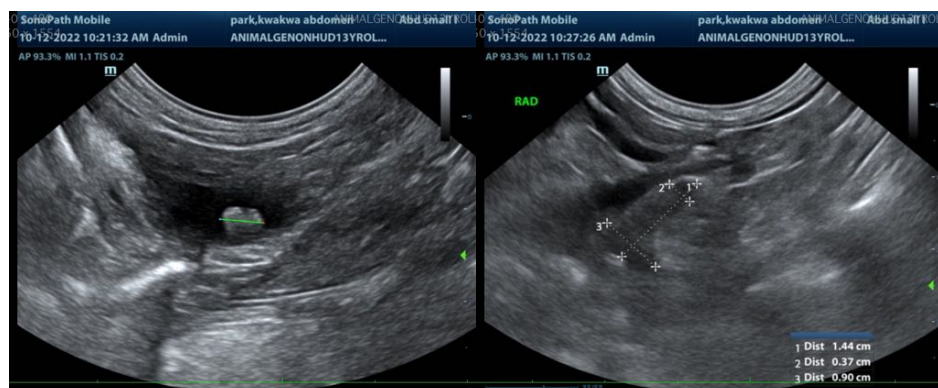
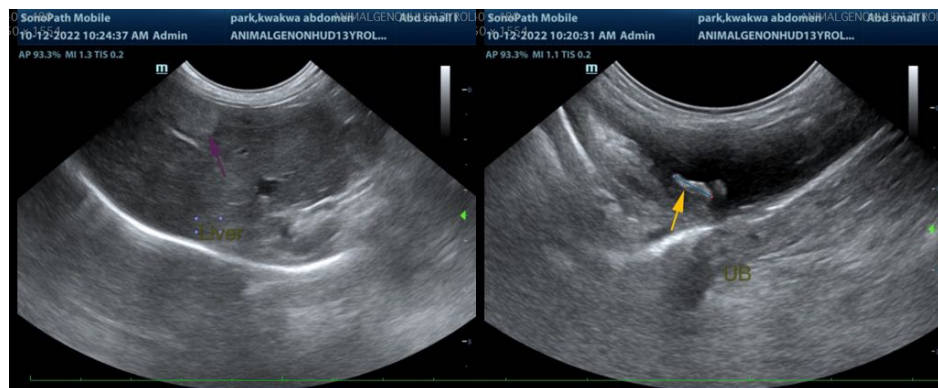
The cause of this patient's mildly increased ALT is likely cholangitis/cholangiohepatitis given the ultrasonographic pathology described above. However, infiltrative disease cannot be ruled out. Recommendations include testing for Leptospirosis if not recently evaluated as well as a FNA of the liver if the patient's coagulation status is appropriate.

Urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

In the meantime, therapeutic recommendations could include a course of empirical, broad spectrum antibiotics and hepatic nutraceuticals including Ursodiol with monitoring of the ALT for improvement.

The described liver nodule is not definitively identified as liver nodule versus a pronounced fat pad or falciform fat. Regardless, the appearance trends towards the benign.

Recommendations to further address the diffuse liver changes include either a separate FNA versus monitoring.





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Yorkshire Terrier

**SEX**

Spayed female

**AGE**

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**WEIGHT**

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Kelly Vazquez, CVT

**HOSPITAL NAME**

Animal General on  
Hudson

**REFERRING VET**

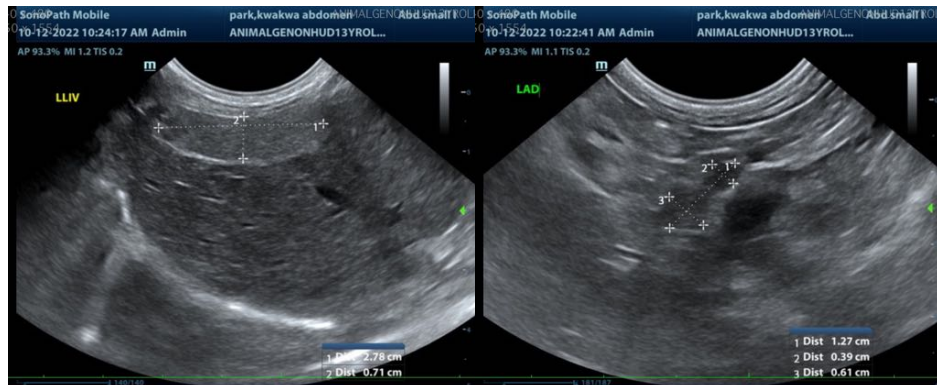
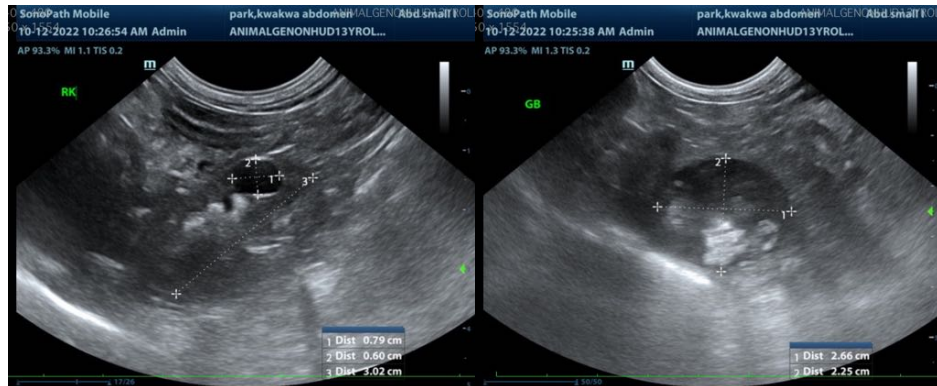
Dr. Ng

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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.

**Beth Johnson, DVM DACVIM**

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