



PATIENT

Lucy Burch

SPECIES

Canine

BREED

Pomeranian

SEX

Spayed Female

AGE

13 Years

WEIGHT

7 Pounds

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Tranquility VC

REFERRING VET

N/A

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DATE

7/5/22

PRESENTING CLINICAL SIGNS

elevated liver values and followup on previous double cavity from 5/13/21. On hydrocodone 7.5 mg bid, cerenia 8 mg every 48 hours, floxetine 5mg sid, prednisone 1 mg sid.
Abnormal PE/Chem/CBC/UA Results: ALT 402, ALKP 2611

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is only mildly distended (empty). Visible contents are anechoic. Urinary bladder wall is unable to be fully assessed for pathology without further distension. No visible masses or cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface. If there are urinary signs and/or concern for urinary bladder pathology, reassessment after complete filling is recommended.

The right kidney is normal in size (3.85 cm) and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased echogenicity and mild loss of corticomedullary distinction. There is no evidence of pyelectasia or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted, primarily in the diverticular of the kidney.

The left kidney is normal in size (3.88 cm) and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased echogenicity and mild loss of corticomedullary distinction. There is no evidence of pyelectasia or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted, primarily in the diverticular of the kidney.

Adrenal Glands

The right adrenal gland is normal in size (1.85 cm long x 1.43 cm at the cranial pole and 0.49 cm at the caudal pole), shape and contour. A small hyperechoic, non-capsule expanding nodule is noted in the cranial pole of the right adrenal gland. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (1.52 cm long x 0.47 cm at the cranial pole and 0.41 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

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). Multifocal well-demarcated hyperechoic homogenous nodules are present. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged. Margins are smooth but round. 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. An approximately 5.0 cm, slightly heterogeneous, primarily hyperechoic nodular mass is noted directly adjacent to the gallbladder, in the mid cranial liver. Visible vasculature and biliary tree appear normal without distension or congestion.



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The gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

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Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

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The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). 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.

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The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

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Pancreas

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

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Free Abdomen

There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

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PRIMARY FINDINGS

- Hyperechoic hepatomegaly – This appearance is non-specific and most consistent with a benign steroid (endocrine) or vacuolar hepatopathy or reactive or idiopathic hepatopathy. Inflammatory and/or infiltrative disease (such as round cell neoplasia) are also possible, but considered less likely.

IMAGING PERFORMED BY

Diane McFadden

The discrete mass is concerning for infiltrative neoplasia such as a well differentiated hepatocellular carcinoma versus other. However, given the lack of progression in the past year, a benign hepatoma or marked nodular hyperplasia, etc. are also likely possibilities.

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SECONDARY FINDINGS

- Gallbladder debris - 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.

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- Hyperechoic splenic nodules – most consistent with benign myelolipomas. Other differentials such as fibrosis or calcification caused by old hematomas or infarcts, chronic inflammation, granulomatous disease or metastatic disease cannot be ruled out, but are less likely.

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- Age related kidney change – This finding is expected/consistent with age-related mild degenerative disease and should be interpreted clinically in combination with laboratory changes.



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- Non-obstructive nephrolithiasis in both kidneys

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- Hyperechoic adrenal nodule in the cranial pole of the right adrenal gland – Differentials include primary adrenal cortical adenoma or adenocarcinoma, pheochromocytoma, myelolipoma, adrenal hyperplasia secondary to pituitary disease or metastatic disease. Ultrasound alone cannot differentiate between functional and non-functional nodules and/or between benign and malignant disease. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest adrenal disease) are most often incidental and should be monitored.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Recommendations include:

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- If not already evaluated, a fine needle aspirate of the liver mass is recommended if patient's coagulation status is appropriate.

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- Given the increased ALT, a concurrent reactive inflammatory, etc. hepatopathy is also likely. Therefore, further recommendations include testing for Leptospirosis if not recently evaluated, followed potentially by a course of broad-spectrum antibiotics combined with hepatic nutraceuticals such as Ursodiol and/or Denamarin with monitoring of liver enzymes for improvement.

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- If liver enzymes improve, antibiotics should be continued until they normalize or plateau, but if improvement is not noted, antibiotics can be discontinued. However, nutraceuticals can be continued long-term.

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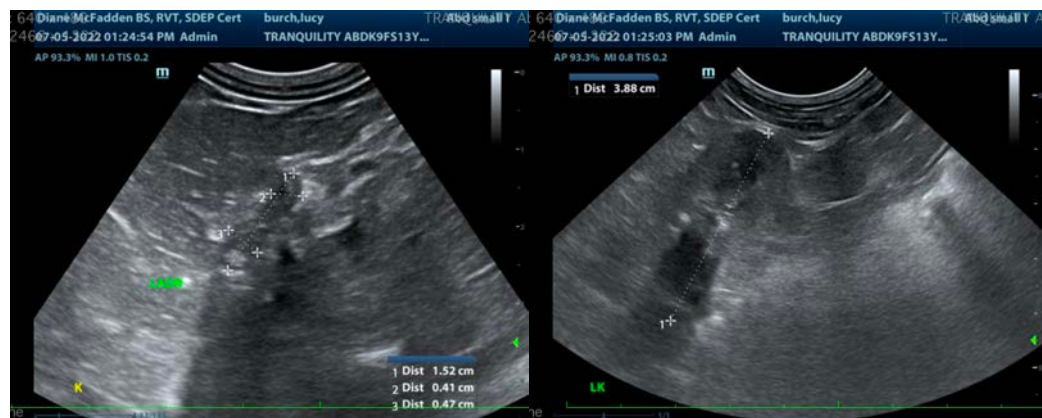
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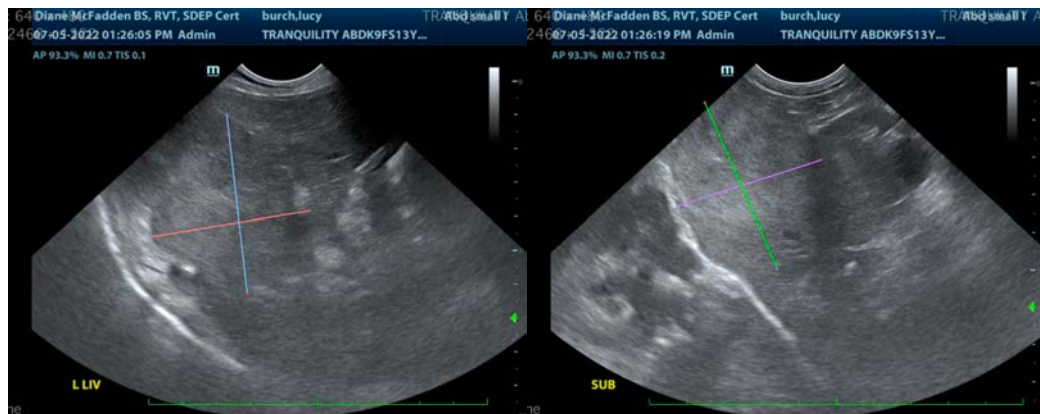
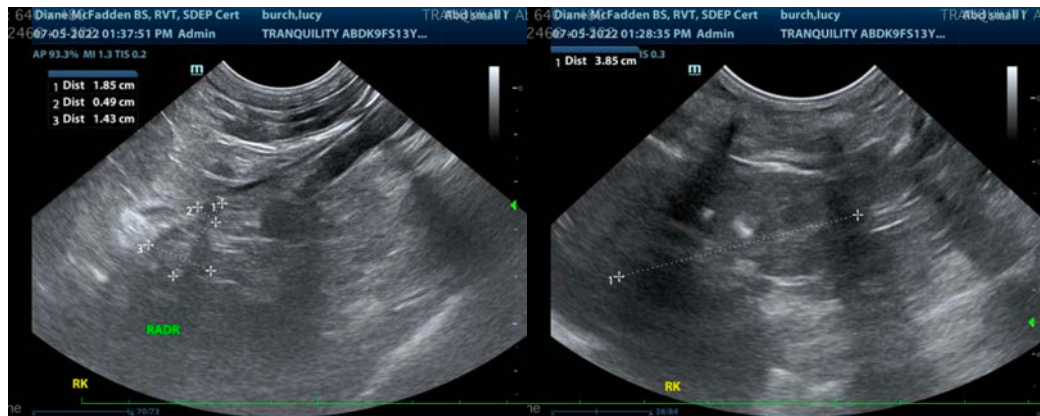
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM
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