**DATE**

2/7/22

PRESENTING CLINICAL SIGNS

History: Elevating ALT despite Denamarin. -Pet presented for limping, blood in urine, trembling more as if in pain. Sent out labs at that time. Noticed ALT continued to increase after was elevated 1 year ago but had come down significantly with Denamarin. Pet previously had an incompletely excised ameloblastoma in 6/2020. ALT elevated 1/2021. In house u/s then and now did not show obvious tumor. pet has been on Denamarin, herbals for arthritis, pain, keeping tumor from recurring.

PATIENT

Desi Eeckhout

Current Medications: Conc. Wei Qi Booster 0.2g - BID x 2 years, Conc. Stasis Breaker 0.2g - BID x 2 year, Denamarin adv medium - qdx 1yr, Provable if loose stool.

SPECIES

Canine

Lab Results: ALT 1/22/2021 - 222 3/9/2021 - 130 9/17/2021 - 153 1/24/2022 - 212h.

Date of Previous IntraPet Ultrasound: No previous IntraPet scans.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

Imaging Performed By: Rachel Brillhart, RDMS.

BREED

Bichon

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**SEX**

Neutered male

Urinary System

Urinary bladder is moderately distended. It has a normal uniform wall thickness (<0.2 cm). Contents include primarily anechoic fluid combined with both gravity dependent and suspended echogenic non-shadowing debris within the fluid. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

AGE

8/19/09

The prostate is normal for a neutered dog.

WEIGHT

19 lbs

Left kidney is normal in size (4.73 cm), shape and echogenicity. It has smooth peripheral margination and appropriate corticomedullary distinction. There is no pyelectasia noted. No mineral is observed.

INTERPRETED BYBeth Johnson, DVM
DACVIM

Right kidney is normal in size (4.97 cm), shape and echogenicity. It has smooth peripheral margination and appropriate corticomedullary distinction. There is no pyelectasia noted. No mineral is observed.

HOSPITAL NAME

Everhart VH

Adrenal Glands

Left adrenal gland is normal in size (2.19 cm long x 0.74 cm at cranial pole and 0.72 cm at caudal pole), shape and contour. Corticomedullary structure is unremarkable.

REFERRING VET

Dr. Key

Right adrenal gland is normal in size (2.26 cm long x 0.92 at cranial pole and 0.51 cm at caudal pole), shape and contour. A small hyperechoic nodule is noted in the cranial pole. Nodule does not disrupt normal shape and/or architecture. Corticomedullary structure is unremarkable.

INVOICE

95845

Spleen

Spleen is subjectively normal in size with normal smooth margins. Parenchyma is normal in echogenicity and echotexture. Multifocal well-demarcated hyperechoic homogenous nodules were noted. 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. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion. GB is moderately distended with anechoic bile and gravity dependent echogenic sediment. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

Gastrointestinal

The visible gastric wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm). The stomach is empty.

The small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). There are no luminal contents noted within small intestines.

Colon is normal in wall thickness (< 0.2 cm) and layering.

Pancreas

Pancreas has normal homogenous echotexture and is normal in echogenicity and smooth margination. There is no evidence of peripancreatic inflammation.

Free Abdomen

Lymph nodes are normal with no observed enlargement.

ULTRASONOGRAPHIC FINDINGS

Urinary bladder sediment – Urine changes are most consistent with cellular debris or crystalluria.

Small hyperechoic adrenal nodule – 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. Lesions greater than 2 cm are generally primary adrenal neoplasia (benign or malignant) vs hyperplasia with lesions greater than 4 cm being more predictive of malignant neoplasia. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest hyperadrenocorticism) are most often incidental and should be monitored.

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.

Hyperechoic hepatomegaly– most consistent with benign steroid (endocrine) hepatopathy or reactive or idiopathic hepatopathy. Infiltrative neoplasia such as round cell neoplasia is also possible, but considered less likely.

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.

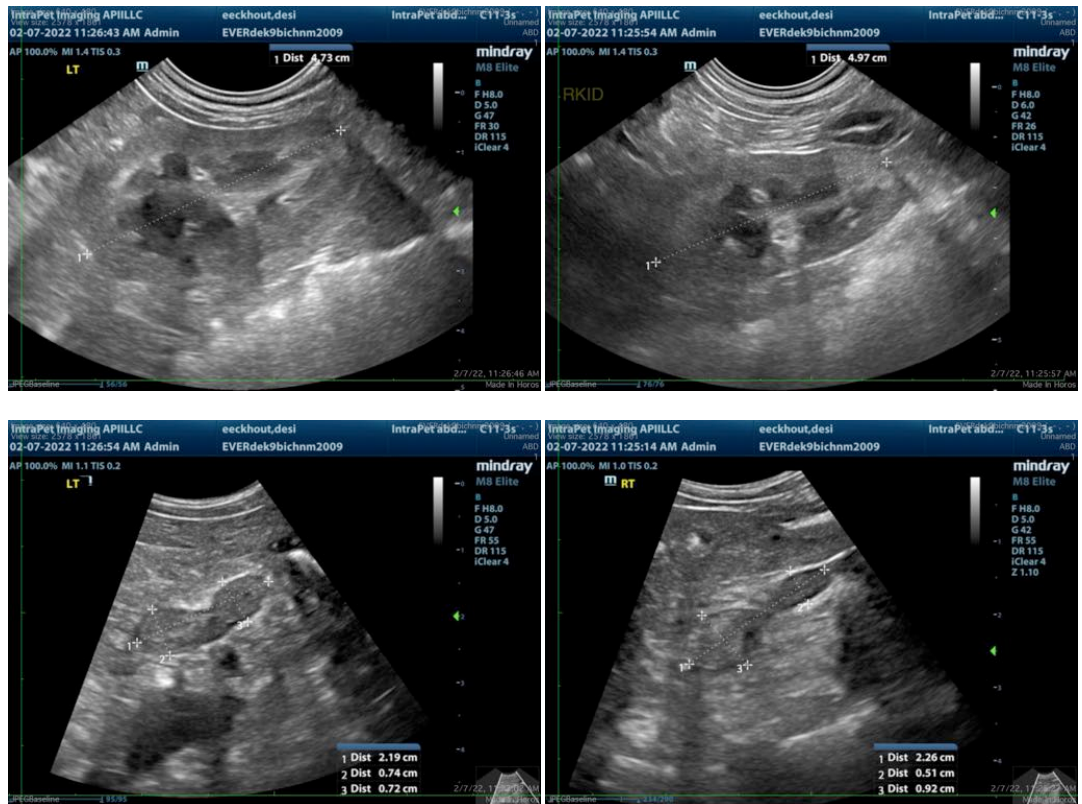
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

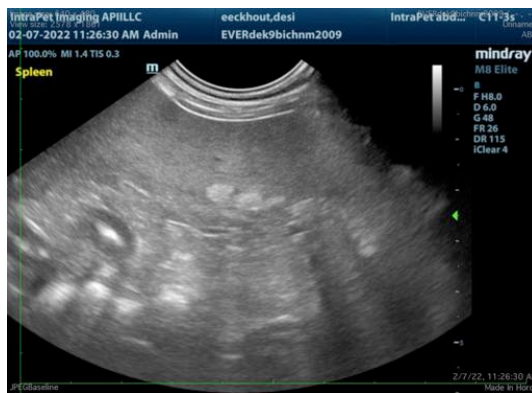
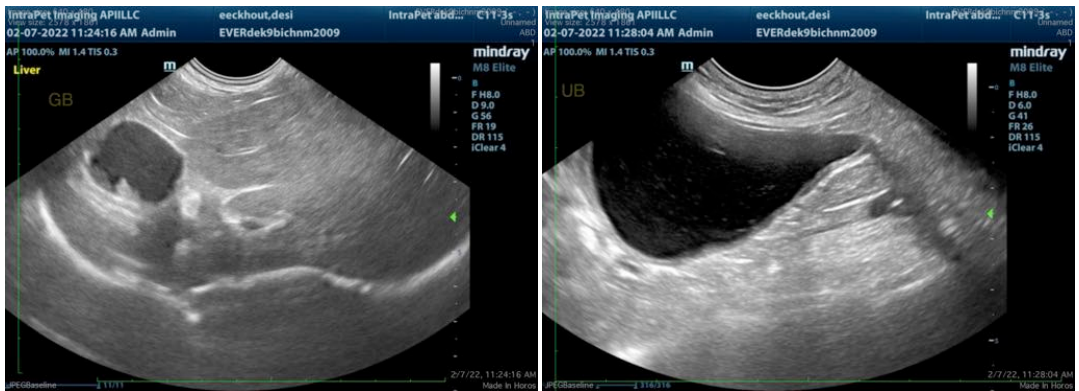
ALT is more liver specific than other enzymes. It is a good indicator of active liver damage (cell membrane disruption, cellular necrosis) if the value is increased by at least 3-4 times normal. Differentials include infectious disease, including Leptospirosis, inflammatory disease (ie. active hepatitis, copper, other), toxic insult as well as infiltrative neoplasia.

ALT levels vary in cases of vascular anomalies such as microvascular dysplasia and portosystemic shunts (PSS), but are often less significantly increased.

Monitor splenic nodules for changes in size and/or appearance, as myelolipomas typically remain unchanged, or fine needle aspirate of the spleen if patient's coagulation status is appropriate.

Recommendations for this patient specifically: Given the mildly increased ALT and the history of hematuria combined with the ultrasound findings include a urine culture, Leptospirosis testing if not already performed followed by a course of empirical antibiotics with monitoring of the ALT for improvement while on antibiotics. Other diagnostics recommended include bile acids if the total bilirubin is normal to further assess hepatic function followed by a FNA of the liver if the patient's coagulation status is appropriate and other diagnostics do not offer a diagnosis and/or the liver enzymes do not improve with a course of antibiotics.





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.

Beth Johnson, DVM DACVIM

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