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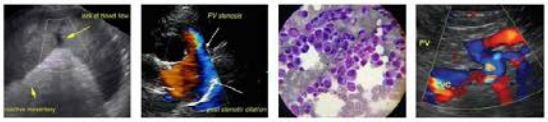

IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT

Bianca Wiens

SPECIES

Canine

BREED

American Eskimo

SEX

Spayed Female

AGE

11 Years

WEIGHT

48.5 Pounds

INTERPRETED BY

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

IMAGING BY

Loetitia Saint-Jacques, LVT

HOSPITAL NAME

Dr. Carrie McCraw

REFERRING VET

Dr. Carrie McCraw

INVOICE

38150

DATE

6/2/22

PRESENTING CLINICAL SIGNS

Approximately 4-year history of progressing patchy alopecia, sparing head and distal limbs, non-responsive to Melatonin (10 mg PO q 12). Elevated Spec cPL (2000) 1 yr ago, incidental finding of rock FB in stomach- removed via endoscopy. Chronic intermittent diarrhea resolving with switch to hydrolyzed diet. RX: Thyro-Tabs 0.4 mg 1 PO q 24. DX: 5/23/22- UCCR 60 (>or= 34) r/o Hyperadrenocorticism, nonadrenal illness, not stressed as sample collected at home and no recent stressful event, first AM USG=1.017. 5/12/22- CBC/Chem/T4/Spec cPL: MCH 20.8 (21.9 - 26), MCHC 32.4 (32.6 - 39.2), Retic Hgb 22.2 (24.5 - 31.8), Cl 103 (108 - 119), ALT 124 (18 - 121), ALP 1,075 (5 - 160, was 298 June 2021), CK 250 (10-200), Spec cPL 115 (0 - 200), T4 3.0 (1.0 - 4.0). 10/2020- AUS: Bilateral mild chronic renal changes with pinpoint dystrophic mineralization, minor gallbladder debris, overall largely early geriatric abdomen without evidence of significant visceral pathology. No evidence of hepato-adrenal pathology. 9/2020- LDDS Test: Baseline cortisol- 1.3 (1.0 - 6.0), 4-hour- 0.3 (<1), 8-hour <0.2 (<1). Goal: Further evaluate cause for ALP elevation, and determine if repeat LDDS test is indicated

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 (5.8 cm). Overall echogenicity is normal with adequate 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 hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (6.27 cm). Overall echogenicity is normal with adequate 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 hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.71 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 0.77 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.

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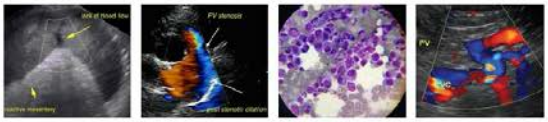

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Liver

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. There are numerous ill-defined, hypoechoic nodules visualized throughout the parenchyma. Examples of this include a large nodule in the caudal right side, measuring 2.02 cm x 2.9 cm, and nodule measuring 0.76 cm, 0.80 cm, and 1.02 cm. Additionally, there is an ill-defined, hyperechoic nodule measuring 1.06 cm.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

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

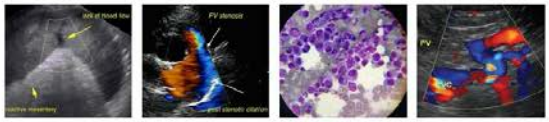
Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

Other

A brief view of the heart was submitted. No significant pericardial effusion was seen.

PRIMARY FINDINGS

- Large, heterogeneous liver with ill-defined hypoechoic nodules – 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. The nodules have the appearance of benign nodules, but an underlying neoplastic process cannot be excluded.



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- Moderate gallbladder debris – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

SECONDARY FINDINGS

- Hyperechoic foci visualized within the splenic parenchyma – lesions have the appearance of benign myelolipomas.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No large mass effects are visualized on today's scan. Additionally, the adrenal glands appear relatively normal, and the gallbladder has mild debris. There are nodules visualized within the liver, but these are relatively subtle and dono't disrupt the architecture, so I suspect they are benign (but unfortunately and underlying neoplastic process cannot be completely excluded).

These are my recommendations for a primary ALP elevation:

- Induction phenomena are the most common cause for an elevation in ALP. These are systemic illnesses that 'turn on' the liver enzyme. Causes of this include Cushing's disease, dental disease, arthritis, and numerous others. In many cases the exact cause is unclear but as long as ultrasound and bile acids tests are normal most patients do not have progressive changes in their liver. While liver biopsy is not routinely performed, vacuolar hepatopathy, is noted on most biopsies. This is often non-progressive but in rare cases can be more severe and lead to liver failure.
- If signs of cushings disease are present recommend endocrine function testing to evaluate for cushings disease.
- Consider fine needle aspirate to rule out round cell neoplasia if this is a concern.
- If a cause for the ALP elevation is not identified: I recommend recheck general blood work every 6 months, ultrasound once per year, and bile acids test every 1-2 years based on other results. If the ALP continues to climb a biopsy could be considered.
- Consider long term use of denamarin, and monitoring for the signs of cushings developing.
- A primary vacuolar hepatopathy can be breed related and is seen in Scottish Terriers, Schnauzers, Cocker spaniels etc..

In this case, if Cushing's disease is highly suspected, and you are unable to document elevated cortisol levels, you could consider an adrenal panel to the University of Tennessee, combined with an ACTH stimulation test to look for the production of atypical adrenal hormones.

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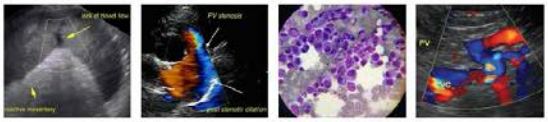

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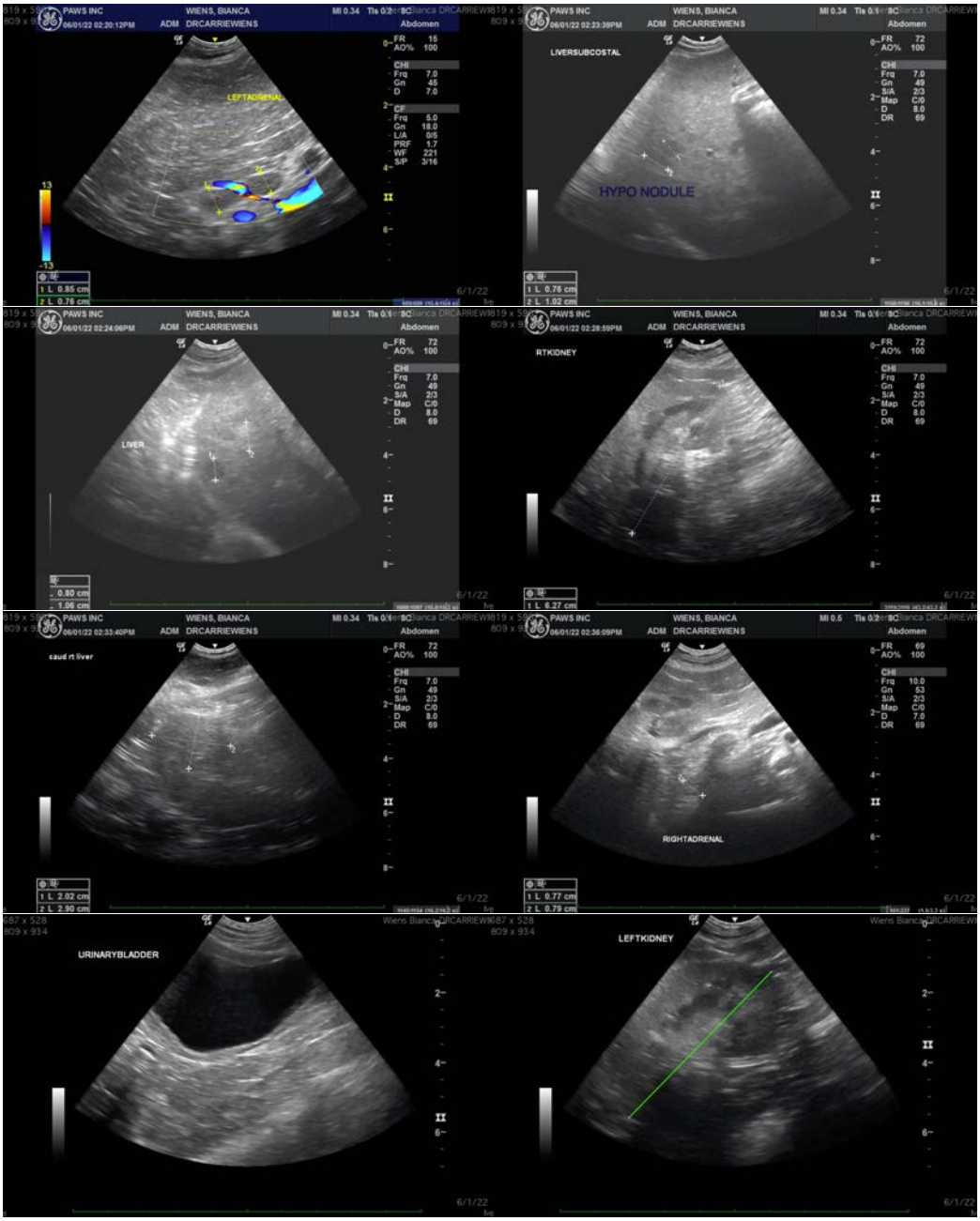

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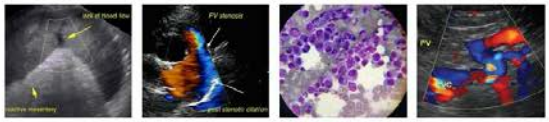

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)
kathleen.sennello@sonopath.com