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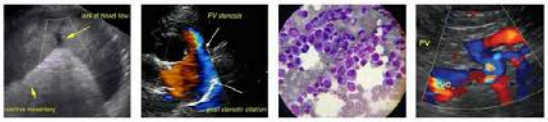

IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT

Lucy Waite

SPECIES

Canine

BREED

Terrier X

SEX

Spayed Female

AGE

8.9 Years

WEIGHT

23.8 Pounds

INTERPRETED BY

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

IMAGING BY

Loetitia Saint-Jacques, LVT

HOSPITAL NAME

Truckee Meadows VH

REFERRING VET

Dr. Rachel Kuester

INVOICE

39233

DATE

7/6/22

PRESENTING CLINICAL SIGNS

Current Problem List: Clinical signs highly suspicious for Cushing's disease: panting, pacing, pu/pd, pot-bellied, polyphagic -- but LDDST equivocal - Pre (5.1), 4h (2.6), 8h (1.3) -- an 8 h post <1.4 does not support hyperadrenocorticism Chronically elevated ALP Presenting Complaint: Px presenting with C/S of Cushing's disease, but LDDST equivocal. Proceeding with AUS to look for other causes of C/S and to assess adrenal glands. If supportive of Cushing's disease will likely proceed with Trilostane.

Abnormal PE/Chem/CBC/UA Results: Pertinent Diagnostic Results: 6/27/22 LDDST - Pre 5.1 - 4 h 2.6 - 8h 1.3 an 8 h post <1.4 does not support hyperadrenocorticism 6/27/22 UA+ culture - UA USG 1.025, trace protein - UMIC - negative for growth 6/21/22 Blood glucose and Blood pressure - BG 97 - Systolic BP (obtained with doppler) avg 170 mmHg 5/17/22 Adult Wellness - TP 7.8 - GLOB 3.9 - ALP 562 - PLT 572 4/2022 (pre-dental labs - Total Body Function) - TP 7.8 - GLOB 4 - ALP 556 - CHOL 401 - PSL 219 - PLT 560

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 (4.35 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 (4.7 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 0.58 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 borderline large in size measuring 0.98 cm at the cranial pole, 0.61 cm at the caudal pole, and 2.4 cm in length. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is abnormal in appearance in that there is a hyperechoic nodule in the cranial pole measuring 0.90 cm x 1.04 cm. There is no evidence of obvious vascular invasion.

Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

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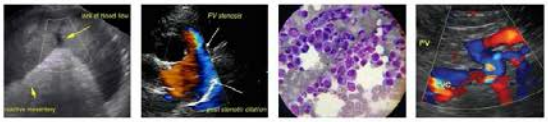

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Liver

The liver is subjectively normal in size, and 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 occasional poorly defined hypoechoic nodules visualized within the parenchyma. One such nodule is visualized measuring 1.0 cm x 0.77 cm.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. 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. Duodenum wall measured 0.40 cm. Jejunum wall measured 0.32 cm. 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.

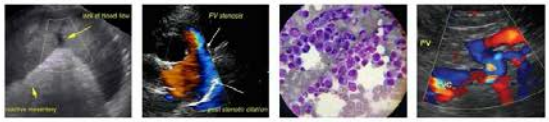
Other

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

ULTRASONOGRAPHIC FINDINGS

- Hyperechoic nodule in the cranial pole of the right adrenal gland – Left/right adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.

- Heterogeneous liver with ill-defined occasional 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



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hepatopathy. The appearance of the hypoechoic nodules trends towards more benign differentials, although an underlying neoplastic process cannot be excluded.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is nodule present on the right adrenal gland. This nodule is relatively small and is not deforming the adrenal gland significantly and doesn't appear to have any evidence of vascular invasion.

These nodules can be benign or malignant and can secrete hormones or be non-active. Options moving forward include:

- If signs of cushings are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (other testing can suffice). I would recommend this test prior to treatment in this case, where a low-dose Dex suppression was equivocal.
- If adrenal dependent cushings is suspected and supported by adrenal function testing consider medical therapy with lysodren or trilostane or consider surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT)
- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma
- If no symptoms of cushings are present, consider either referral for surgery or continued monitoring with ultrasound (in 3-4 months).
- Many of these nodules can be benign and incidental in nature, unfortunately that is difficult to determine with a single ultrasound.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.

Given the signs of Cushing's in this patient and the strong suspicion, I would consider an adrenal panel combined with an ACTH stimulation test and contrast CT scan to evaluate for possible removal. The reported blood pressure measurements have been borderline elevated. Recommend continued monitoring of this. If hypertension is thought to be present, recommend catecholamine testing.

Although the changes in the liver appear benign and could be consistent with a vacuolar hepatopathy, recommend either a fine needle aspirate or continued monitoring of the nodules reported.

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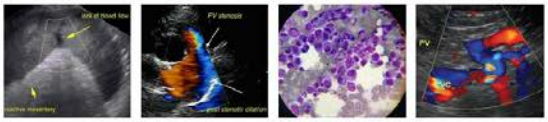

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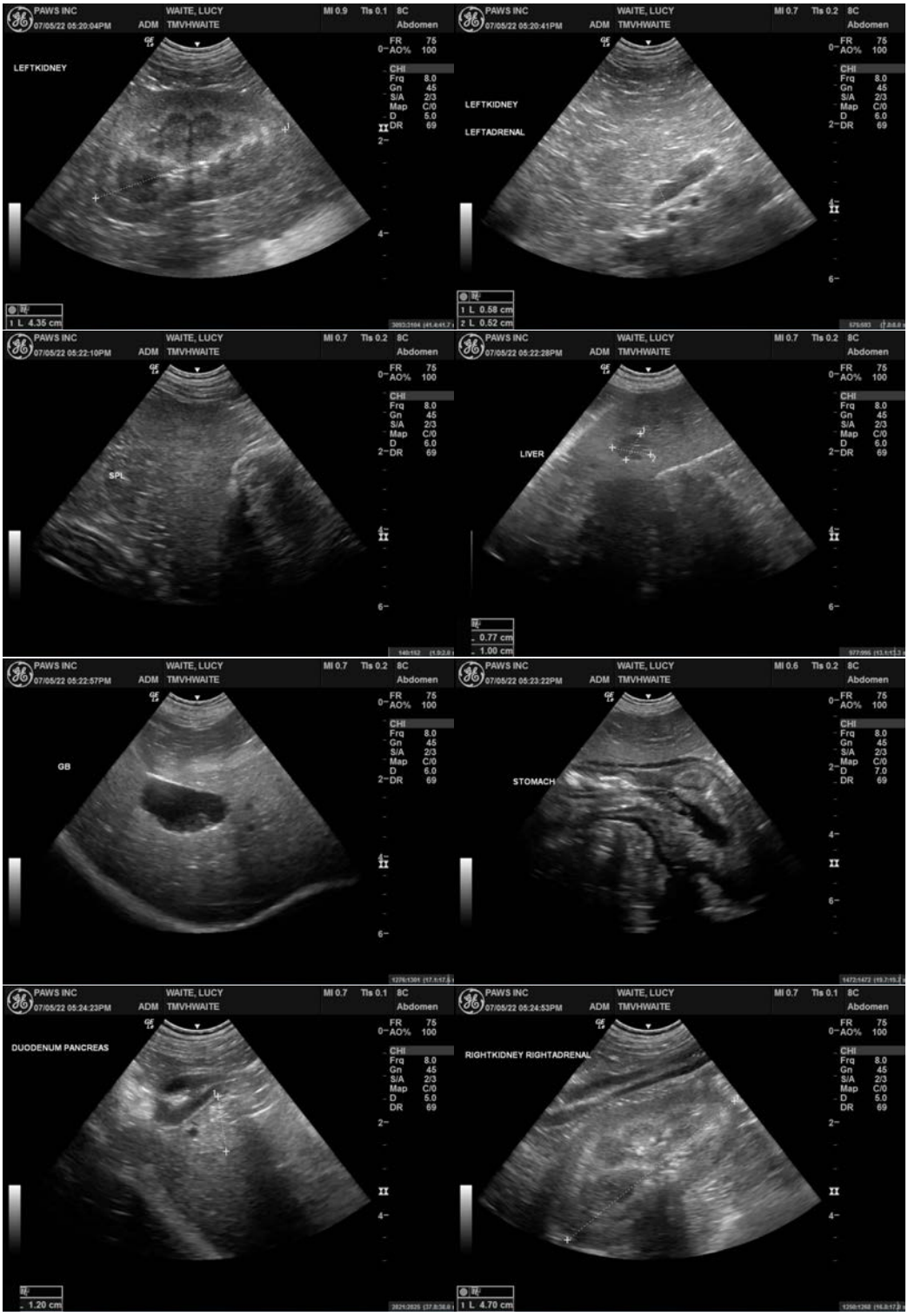

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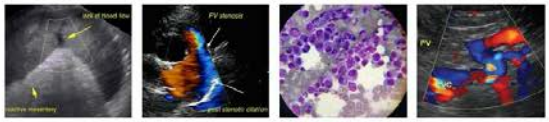

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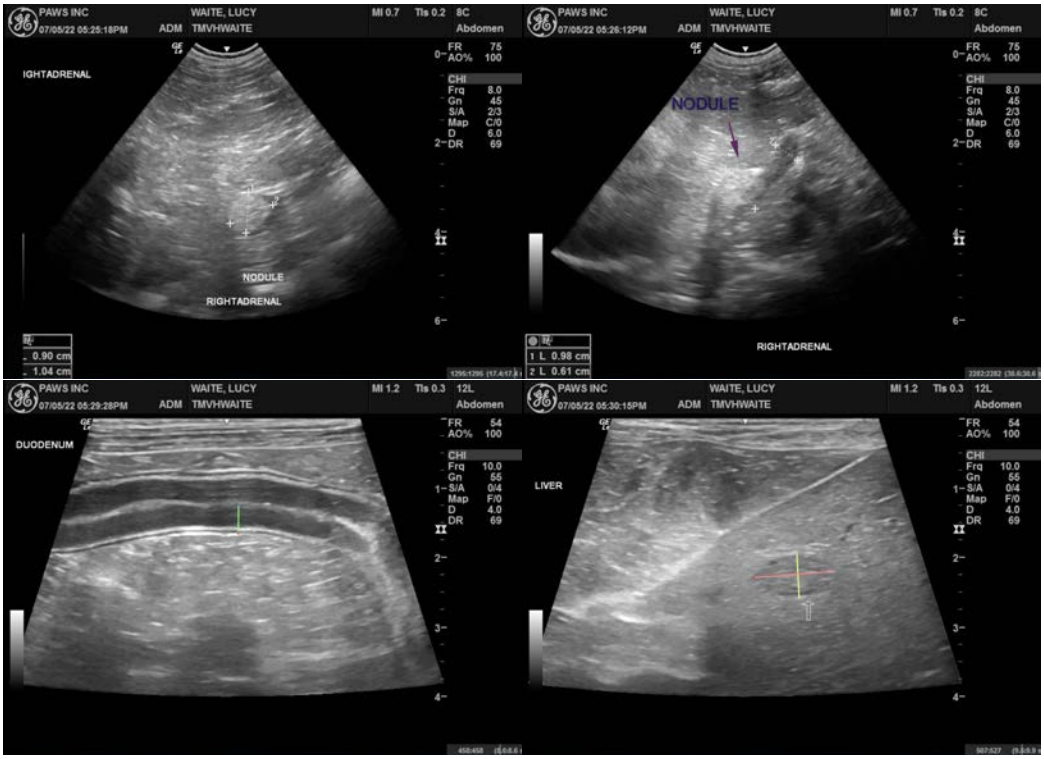

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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