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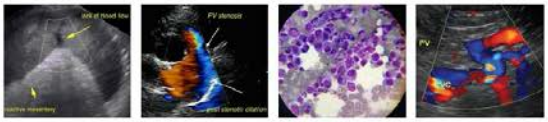

IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT

Maggie Heggarty

SPECIES

Canine

BREED

Cocker Spaniel

SEX

Spayed Femlae

AGE

16 Years

WEIGHT

22.8 Pounds

INTERPRETED BY

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

IMAGING BY

Loetitia Saint-Jacques, LVT

HOSPITAL NAME

Valley Vet Clinic

REFERRING VET

Dr. Anna Lopez

INVOICE

39548

DATE

7/14/22

PRESENTING CLINICAL SIGNS

Sedation: butrophanol but still tense abdomen Chief Concern/Provisional Diagnosis: P presented to emergency on 6/28/22 for lethargy and, incontinence, and unsteady hindlimbs. ER performed CBC/ chem panel, liver values were elevated with mild anemia. ER DVM recommended ultrasound/ follow up at regular DVM. P came for follow up, O states she has seen improvement, less depressed and hind limbs are normal again. Diagnosis: DDX: hepatitis, neoplasia, hepatomegaly History/Physical Findings: Mentation: BAR BCS: 5/9 Hydration status: euhydration MM Pink, capillary refill time less than 2 seconds. Heart auscultates normally, no murmur or arrhythmia noted. Lungs auscultate normally. Hair coat appears healthy. OU appear normal. AU are clean in visible ear canal. Nose appears normal. Mouth appears to have grade 4/4 periodontal disease. LN are WNL. Abdomen palpates normally with no palpable masses. No signs of lameness. ALK P= 681, ALT= too high to read Current Therapy and Medications: Proin 25 mg PO BID, liquid-tinic 3 ml PO BID

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is mildly/moderately distended with anechoic urine. The Bladder wall appears of normal thickness at 0.27 cm, but there is a slightly irregular mucosa. The area of the trigone, ureteral papillae and proximal urethra appear normal with no evidence of mass lesions or calculi. Findings could be consistent with mild cystitis or lack of urine distention.

The left kidney has a normal shape and size (4.49 cm). Overall echogenicity is slightly hyperechoic with poor 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 (5.1 cm). Overall echogenicity is slightly hyperechoic with poor 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 large in size measuring 1.18 cm at the cranial pole, 0.92 cm at the caudal pole, and 2.37 cm in length. It is observed in its normal position cranial to the left renal artery. It is somewhat irregular in appearance in that the cranial pole is larger than the caudal pole, but there is no obvious evidence of vascular invasion.

The right adrenal gland is normal in size measuring 0.55 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. The spleen echotexture is heterogenous and mildly mottled, the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There is a small 0.35 cm hypoechoic lesion visualized within the parenchyma.

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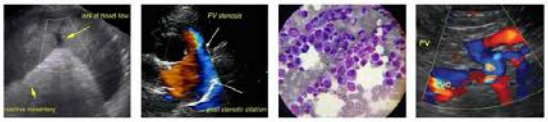

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Liver

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 is a poorly defined hypoechoic lesion in the hepatic parenchyma measuring 1.24 cm x 0.80 cm. Additionally, there is a small cystic lesion visualized within the parenchyma measuring 1.0 cm.

The gallbladder lumen is moderately distended. The wall of the gall bladder appears slightly prominent and thickened, measuring at 0.18 cm. 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. 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 prominent and mottled compared to the surrounding isoechoic 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. There is a prominent mesenteric lymph node visualized measuring 0.47 cm. The omentum is of normal echogenicity.

Other

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

PRIMARY FINDINGS

- Mildly enlarged left adrenal gland – Left adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.
- Mildly mottled spleen with small hypoechoic lesion – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.

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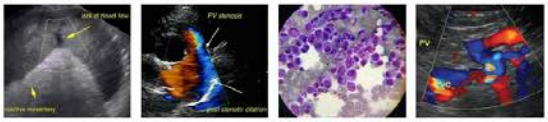

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- Large, heterogeneous liver with hypoechoic lesion – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. The lesion is poorly defined and trends towards a more benign lesion, but underlying neoplasia cannot be ruled out as a possibility.

SECONDARY FINDINGS

- Decreased corticomedullary distinction in both kidneys – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis.
- Prominent, mottled pancreas – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Prominent gallbladder wall – This could be an incidental finding or could be consistent with mild cholecystitis.
- Mildly irregular urinary bladder wall – The bladder mucosal changes could be consistent with cystitis or artifactual due to lack of adequate luminal distension. Bladder neoplasia cannot be ruled out but is considered unlikely in this patient.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

An obvious cause for the anemia and rear limb weakness is not visualized. The liver does appear large and heterogeneous, which could be consistent with a primary hepatopathy. In these situations, I would consider the following:

- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc...
- Consider PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history
- If not already done, consider pre and post prandial bile acids to evaluate liver function
- If the ALP is significantly elevated relative to the ALT and symptoms consistent with cushings are present, consider adrenal function testing (ACTH stim). Adrenal function testing should only be considered once this patient is feeling better, so as to not cause interference by non-adrenal illness.
- Consider Fine needle aspirate if round cell neoplasia is on your differentia list (25 g needle, normal coags)

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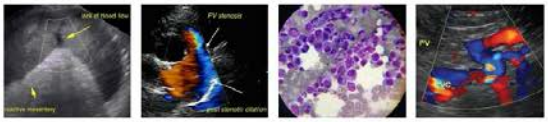

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- If no response to medical care (denamarin, antibiotics,+/- ursodiol etc…) Consider liver biopsy with samples obtained for histopathology, culture, and copper levels.

The left adrenal gland appears largely normal in appearance other than that the cranial pole is enlarged. This could be a normal anatomic variation or an early emergent neoplastic condition. Additionally, these types of changes can be benign or malignant and can secrete hormones or be non-active. Options moving forward for further evaluation 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). Adrenal function testing is recommended once this patient is feeling better.
- 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.
- Many of these nodules can be benign and incidental in nature, unfortunately that is difficult to determine with a single ultrasound.

Continued monitoring of this adrenal gland is warranted to ensure that the cranial pole does not continue to enlarged and become invasive, etc. Recheck ultrasound could be considered in 2-3 months.

The spleen is somewhat mottled with some very small, hypoechoic lesions. Consider a fine needle aspirate.

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

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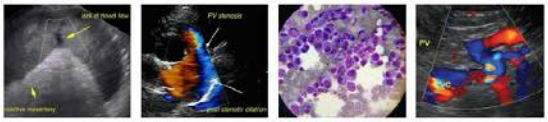

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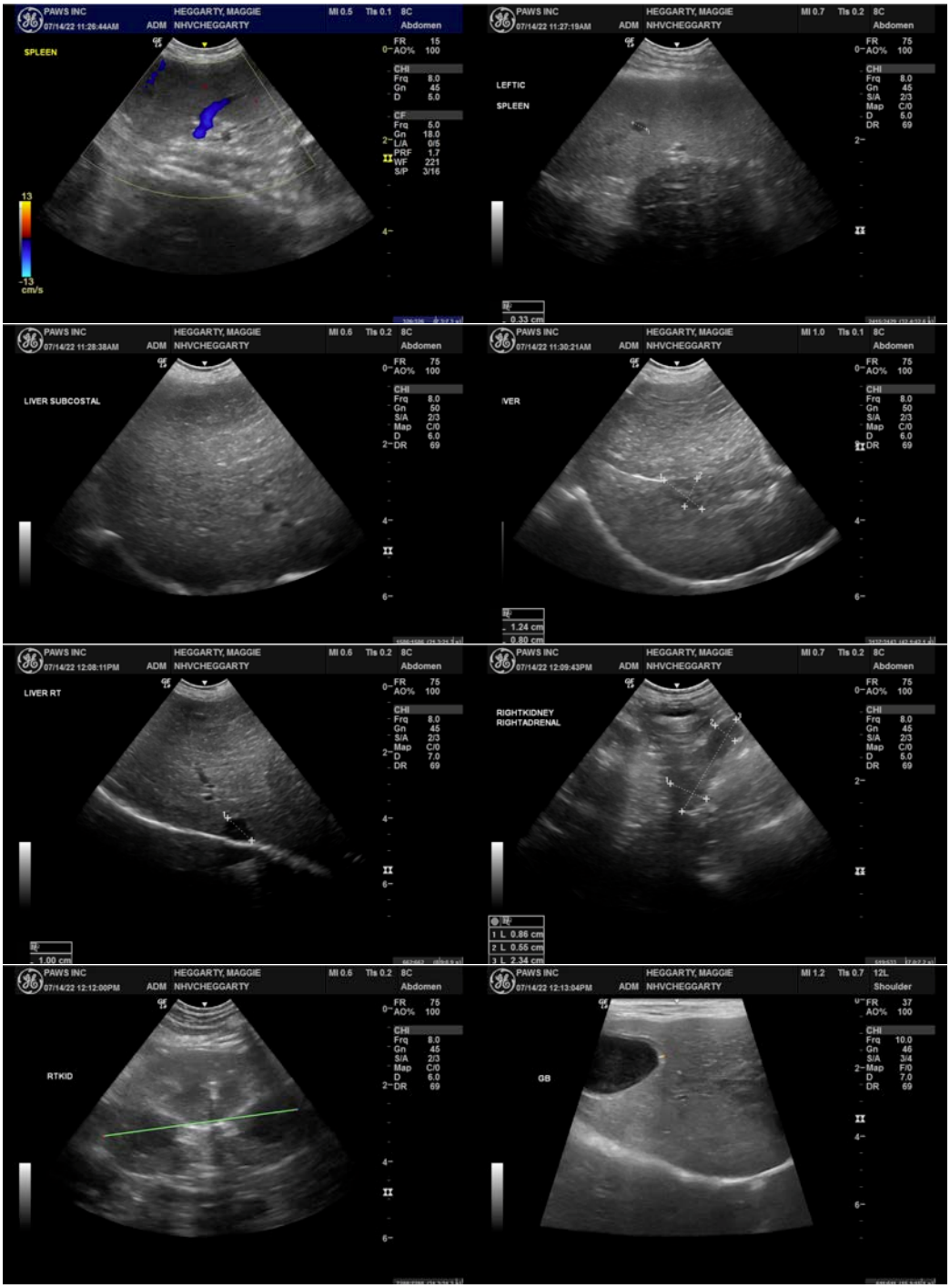

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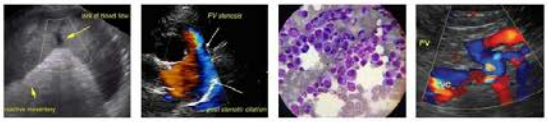

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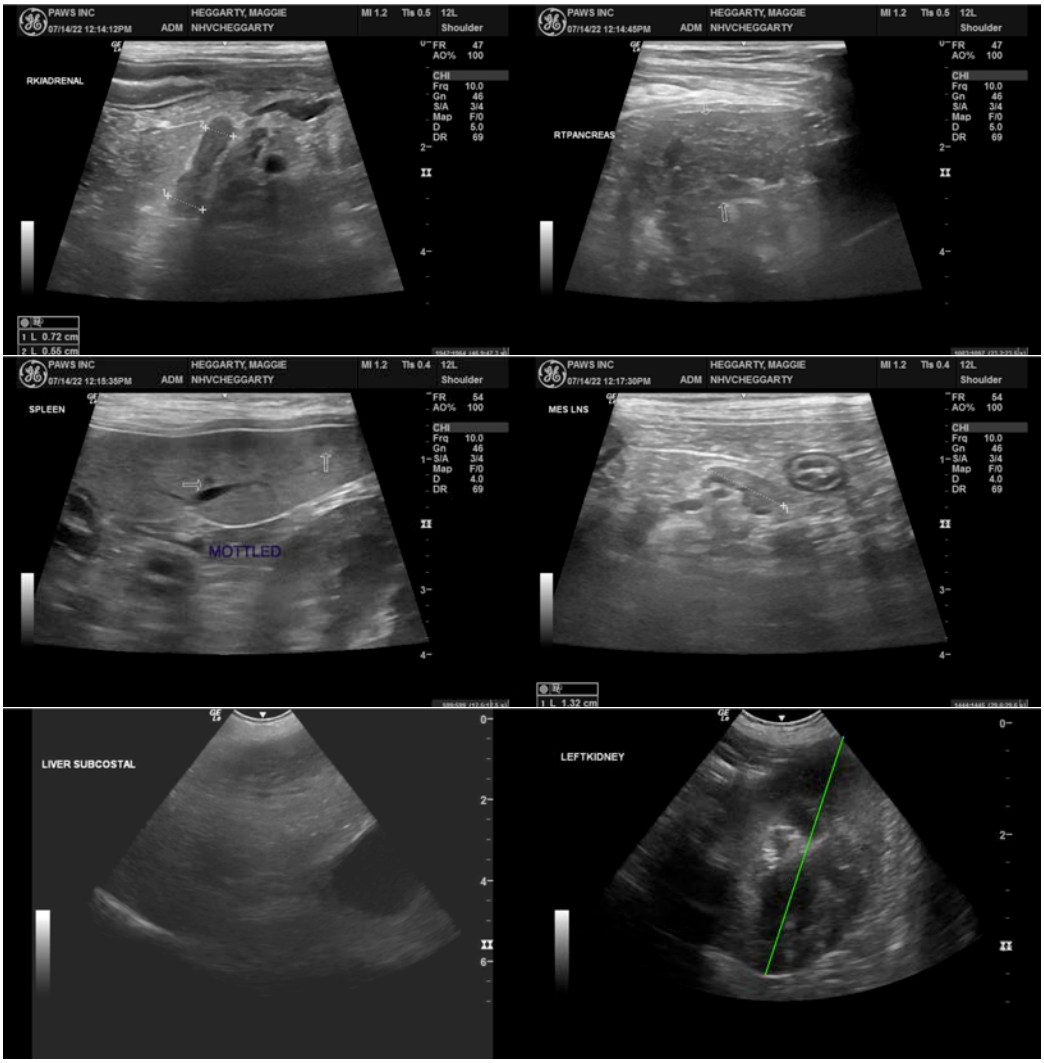

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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