



PATIENT PRESENTING CLINICAL SIGNS

Ruby Lee Miller History: Few month weight gain and hair coat change. Seen at Reno vet today and dx with splenic mass, liver dz, and bacterial infection. Referred for emergency ultrasound. PE consistent with Hypothyroidism - HR 60, BCS 9/9, thin coat.

SPECIES

Abnormal PE/Chem/CBC/UA Results: WBC 16k, Neut 20K (mild leukocytosis), ALT 488, ALP 274, T4 low
Canine

BREED

GSH Mix

SEX

Spayed Female

AGE

9 Years

WEIGHT

80 Pounds

INTERPRETED BY

Lisa Carioto, DVM, DVSc,
Diplomate ACVIM

IMAGING PERFORMED BY

Loetitia Saint-Jacques, RVT

HOSPITAL NAME

Donner Truckee VH

REFERRING VET

Dr. India Vannini

INVOICE

15800

DATE

5/27/22

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is well distended. The wall is smooth and regular. No abnormalities are present with the trigone or proximal urethra. A moderate amount of free floating sediment is present, however, there is no evidence of cystoliths, polyps or a mass.

Kidneys

The **left** kidney measures 7.42 cm. The capsule is smooth. A very mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

The **right** kidney measures 7.60 cm. Findings are similar to the left kidney.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.67 cm at the cranial pole, 0.69 cm at the caudal pole. A mass or nodule is not observed. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

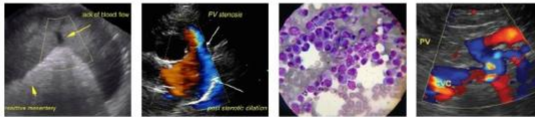
The **right** adrenal gland measures 0.52 cm at the cranial pole, 0.56 cm at the caudal pole. A mass or nodule is not observed. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver

There are no obvious signs of hepatomegaly. The liver's borders are smooth, but mildly rounded. A diffuse, mildly coarse or granular echotexture is observed. It is very mildly hyperechoic, i.e. it is isoechoic to the falciform fat, but hypo to the spleen). No obvious abnormalities are noted with the echogenicity or hepatic vessels.



PATIENT Subcostal view: A hypoechoic nodule measuring 1.32 cm in diameter x 1.66 cm in length. A second hypoechoic nodule is observed in the left liver. It measures 1.8 cm in diameter x 2.25 cm in length.
Ruby Lee Miller No abnormalities are observed with the hepatic vessels visualized.

SPECIES Right lobe: Multiple hypoechoic nodules of variable size are observed scattered throughout the parenchyma. The largest one measures 0.77 cm in diameter. The nodules are suggestive of nodular hyperplasia. Target lesions are not identified, i.e., neoplasia is considered unlikely.
Canine

BREED The gallbladder (GB) is moderately distended with a small to moderate amount of free floating gravity dependent and inspissated echogenic material. The wall is within normal limits in thickness and echogenicity. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction.
GSH Mix

Gastrointestinal

SEX The stomach lumen is filled with ingesta. The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.
Spayed Female

AGE A moderate amount of ingesta is present within the lumen of the small intestines. The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. No abnormalities are observed with the ileo-cecal-colic junction. Abnormally dilated loops of bowel are not observed.
9 Years

WEIGHT A large amount of gas and ingesta are present within the transverse colon.
80 Pounds

The colonic wall is not thickened and mural detail is considered normal.

There are no obvious signs of a mass, foreign body, infiltrative disease or an obstruction in the gastrointestinal tract.

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Pancreas

No overt abnormalities are observed with the architecture, echogenicity or echotexture. There is no evidence of hyperechogenicity of the surrounding mesentery, i.e., signs of active pancreatitis are not present.

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Other

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Lymph nodes

No abnormalities are observed

Abdominal effusion is not visualized.

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Heart

A brief video clip of the heart was submitted. Pericardial and pleural effusion are not identified. A mass is not observed on evaluation of the cardiac chambers. No obvious abnormalities with contractility or chamber size (measurements not performed).

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ULTRASONOGRAPHIC FINDINGS

- **Liver:** Mildly coarse or granular echotexture may be due to vacuolar and reactive hepatopathies, respectively. Other differential diagnoses for a diffusely hyperechoic liver



PATIENT

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such as, hepatitis, cholestasis and cholangitis/cholangiohepatitis are considered much less likely. Nodular hyperplasia is the likely cause of the hypoechoic nodules. Target-lesions are not observed, i.e. neoplasia is considered unlikely.

SPECIES

Canine

- **Gallbladder:** Gallbladder sludge; most likely clinically insignificant, however, gastroesophageal reflux disease (GERD), may occur in some patients. Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required depending on the patient's history.

BREED

GSH Mix

- **Urinary bladder:** The free floating sediment within the lumen of the urinary bladder is most likely composed of mucus, crystalline material and exfoliated cells. The debris is likely clinically insignificant given the lack of inflammatory changes to the bladder wall, however, findings should be correlated with clinical signs and a urinalysis.

SEX

Spayed Female

- **Kidneys:** Bilateral renal changes are present, which are suggestive of age related degeneration.

AGE

9 Years

- **Pancreas:** age related pancreatic changes noted, without signs of neoplasia or active pancreatitis.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

WEIGHT

80 Pounds

The following are suggested

- Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required depending on the patient's history.
- Treatment of hypothyroidism with a re-evaluation of the TT4 and hepatic enzyme activities, including the GGT, 3-4 weeks following initiation of therapy (dose of 0.5 mg/m², divided BID).
- The hepatic nodules are much more suggestive of nodular hyperplasia/regeneration, however, if no improvement in blood work results, a fine needle aspirate or tissue biopsy is suggested to achieve a definitive diagnosis.
- A urinalysis, if not already performed

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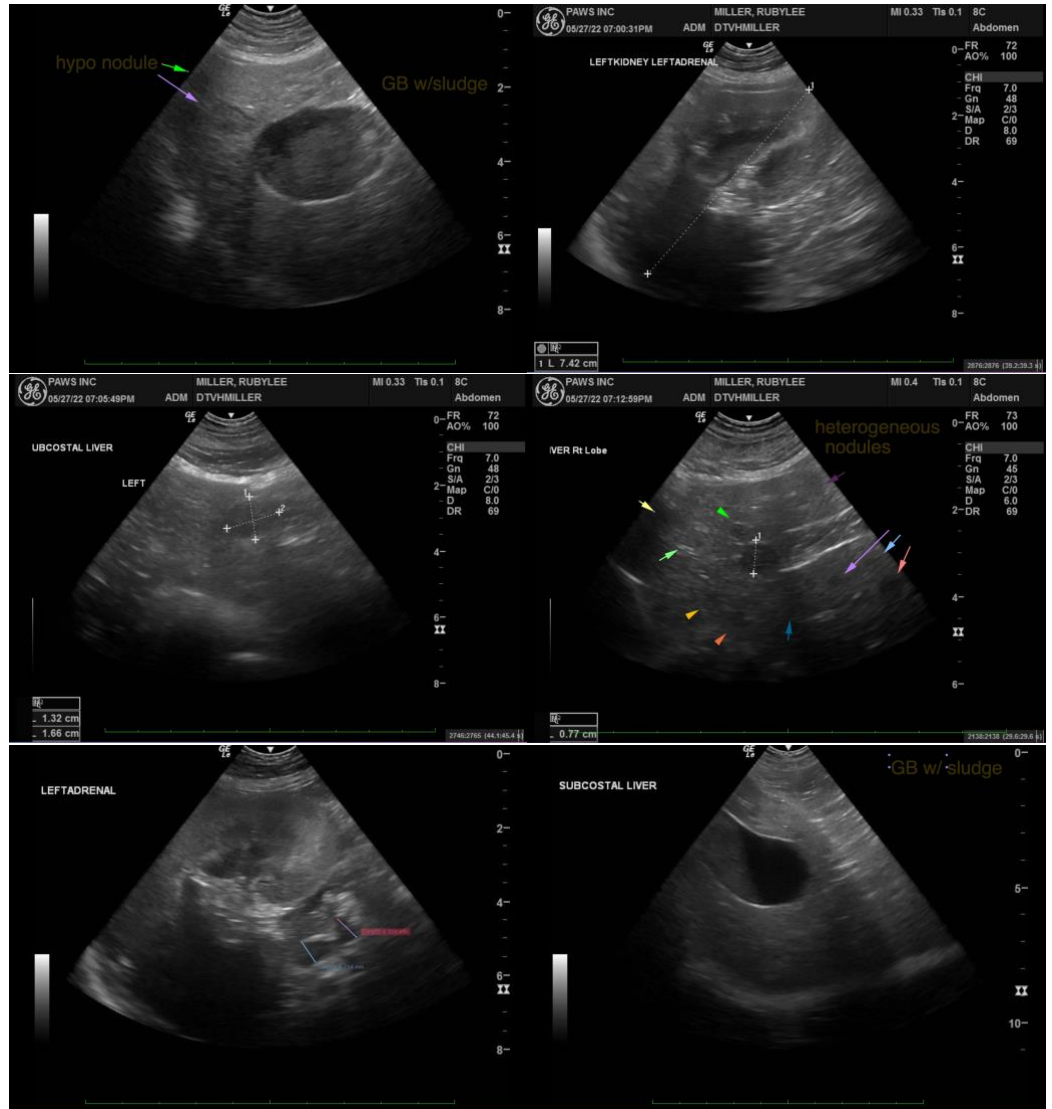
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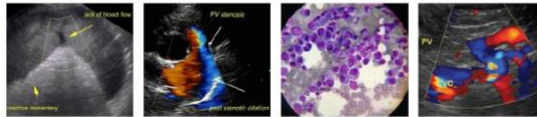
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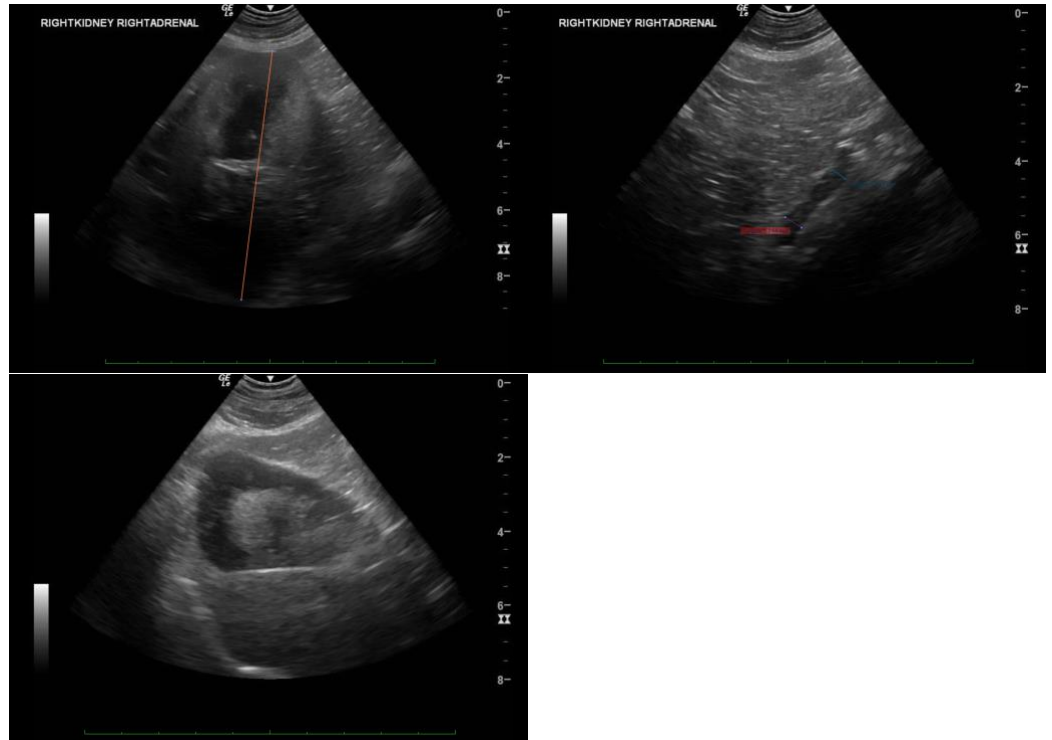
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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