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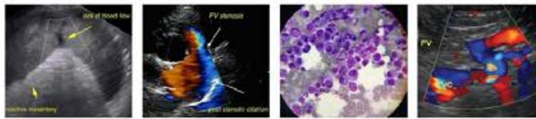


IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT
Mollie Lee

SPECIES
Canine

BREED
Shih Tzu

SEX
Spayed Female

AGE
11 Years

WEIGHT
9.74 Pounds

INTERPRETED BY
Kathleen Sennello DVM, MS, Diplomate ACVIM

IMAGING PERFORMED BY
etitia Saint-Jacques, RVT

HOSPITAL NAME
MountRose AH

REFERRING VET
Dr. Katie Weldon

INVOICE
26737

DATE
10/28/21

PRESENTING CLINICAL SIGNS

not sedated- Canine, Shih Tzu, Female, Spayed, 11 years, 9.74 lbs. HISTORY: • P has a chronic issue with her GI tract. She is currently on Hill's z/d diet, cerenia, prednisone, and Vitamin B-12 injections. • P had a fast scan U/S that day (4/30/21), where 2 hypoechoic nodules were found in the liver (measured 0.53 x 0.57 cm and 0.48 x 0.53 cm). Renoliths bilaterally. Stomach wall appeared thickened and inflamed with no obvious loss of layering; possible thin area ventrally (may have been an ulcer??). Otherwise NSF. • Recheck recheck liver nodules (5/28/21) - One measured 0.39 cm x 0.57 cm (approx. same size) and the other measured 0.83 cm x 0.64 cm (larger). • Recheck recheck liver nodules (7/27/21): Primary Findings: The hepatic nodules trend toward the benign (i.e., regenerative nodular hyperplasia); however, an early neoplastic process cannot be completely excluded. The 2 previously observed nodules are similar in size. One new nodule is present (on the left). The diffuse hepatic parenchymal changes are non-specific and are most consistent with benign pathology (i.e., vacuolar hepatopathy) with a lower possibility of inflammatory/immune mediated disease or infiltrative neoplasia. Correlation with the patient's liver values is recommended. (Note: P is on pred) Secondary Findings: Bilateral renal dystrophic mineralization with small non-obstructive nephroliths. The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis. Physical Exam: Weight: 9.74 lbs. Oral cavity = 1/4 dental disease. Rest of exam WNL. LABORATORY FINDINGS: None recent. REASON FOR ULTRASOUND: • Evaluate liver nodules.

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 (3.3 cm) with numerous non-obstructive nephroliths. 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 (2.9 cm) with numerous non-obstructive nepholiths. 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, infarcts or hydroureter. Renal vasculature is normal.

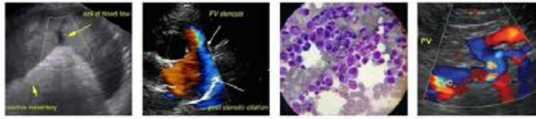
Adrenal Glands

The left adrenal gland is normal in size measuring 0.48 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 0.59 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, 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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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 four hypoechoic nodules visualized in the liver. There were marked as A-D to try to prevent double counting nodules. Nodule A is smaller and close to the gallbladder, and measured 0.34 cm x 0.53 cm. Nodule B measures 1.13 cm x 0.77 and is close to the gallbladder. Nodule C is 0.52 cm x 0.43 cm. Nodule D is the smallest, measuring 0.37 cm x 0.33 cm. The most recent measurements available are of two nodules measuring 0.39 cm x 0.57 cm and 0.83 cm x 0.64 cm. I suspect no dramatic change has taken place.

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. Jejunum wall measured 0.27 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.

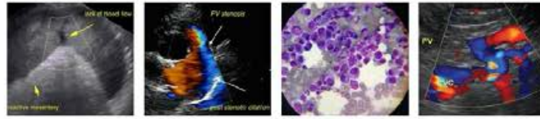
Free Abdomen

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.

ULTRASONOGRAPHIC FINDINGS

- Large, heterogeneous liver with four hypoechoic nodules – The diffuse hepatic changes are non-specific and can be seen with vacuolar hepatopathy, reactive change, nodular hyperplasia or, less likely, inflammatory/immune-mediated disease, infiltrative neoplasia, or other hepatopathy. The findings are most consistent with relatively stable regenerative nodules, although a neoplastic process cannot be ruled out. Findings are most likely consistent with a steroid hepatopathy.

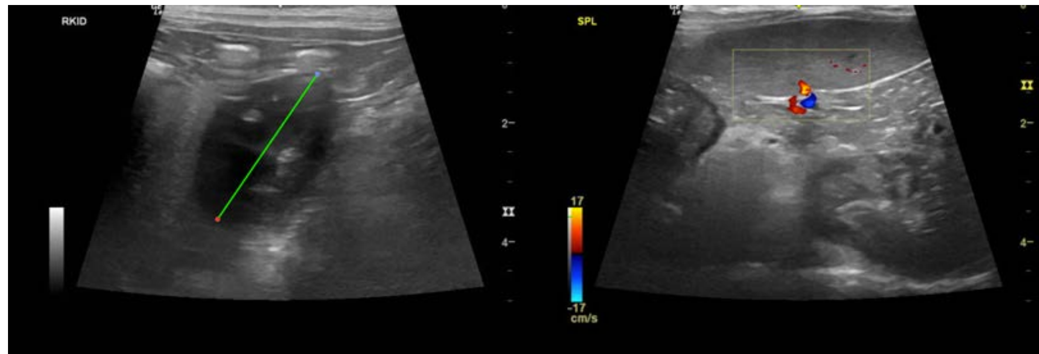
- Mildly decreased corticomedullary distinction in both kidneys with numerous non-obstructive nephroliths – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. The hyperechoic mineralized foci

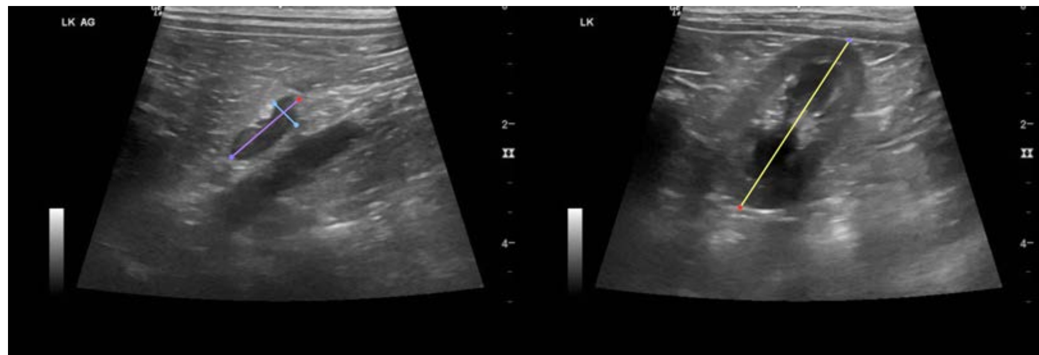


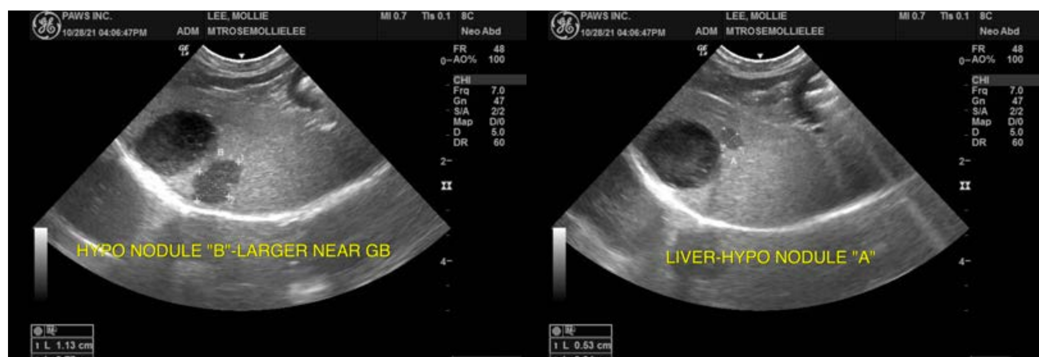
observed at the corticomedullary junction of the left/right kidney are consistent with small, non-obstructive nephroliths.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver is large and heterogeneous with four relatively small, hypoechoic nodules, which have been followed over the last 6 months. It is difficult to definitively compared size, but none of the nodules appear to have dramatically change. They likely represent regenerative nodules and a steroid hepatopathy. If desired, recheck evaluation can be considered in 4-6 months, sooner if bloodwork values are worsening, or the patient is not doing well.







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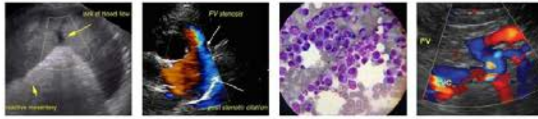

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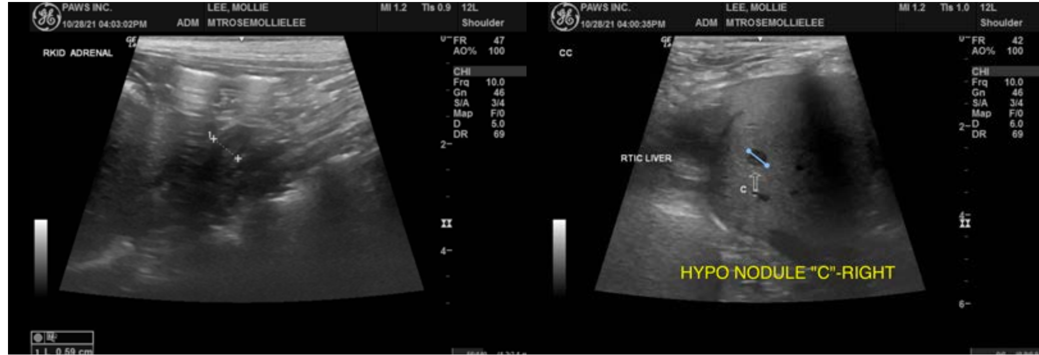

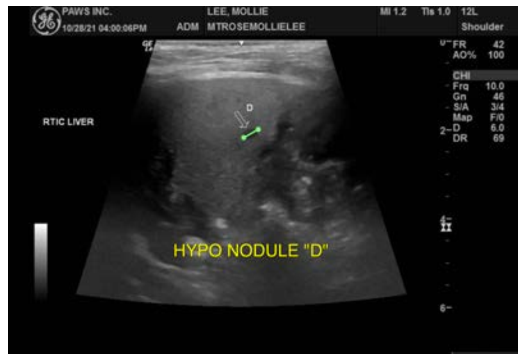

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

kathleen.sennello@sonopath.com