



PATIENT

Timber Fleck

PRESENTING CLINICAL SIGNS

High ALT, ALP, GGT and cholesterol.

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

BREED

Pomeranian

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen with mild dependent mineral. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

SEX

MN

No overt pathology was noted in the area of the residual prostate.

AGE

15 years

The area of the aortic trifurcation was free of pathology.

WEIGHT

3.8 kg

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pyelectasia was present. Medullary to pelvic mineral to nonobstructive renolithiasis was present in both kidneys. The left kidney measured 3.3 cm in length. The right kidney measured 3.5 cm in length.

INTERPRETED BY

R. McKenzie Daniel,
DVM, DABVP
(Canine and Feline)

Adrenal Glands

Mild hyperechoic, nonmineralized nodules were present in the cranial pole of both adrenal glands, more prominent in the left adrenal gland with mild associated symmetrical capsule expansion. The nodule did not exhibit signs of mineralization or vascular invasion. The left adrenal nodule measured 1.36 cm x 1.20 cm. The overall left adrenal gland measured 1.2 cm width at the cranial pole and 0.46 cm width at the caudal pole. The nodule in the cranial right adrenal gland measured 0.76 cm x 0.46 cm. The overall right adrenal gland measured 0.8 cm width at the cranial pole and 0.51 cm width at the caudal pole.

IMAGING PERFORMED BY

Dave Stasiuk RDMS,
RDCS

Spleen

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory or neoplastic disease.

HOSPITAL NAME

Resolution Vet
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REFERRING VET

Dr. Melissa Huet

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Liver/ Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. Mid intraparenchymal mild nonhomogeneous to uniform hyperechoic nodules were present. An example of a liver nodule measured 1.37 cm in diameter.

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The gallbladder was non distended in size with echogenic, nonmineralized, non dependent biliary sludge. The biliary sludge was non organized with a hypoechoic to anechoic, irregular to interrupted rim visible between the nondependent sludge and inner wall. No signs of peripheral inflammation.

SPECIES

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Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained echogenic, nonshadowing ingesta most consistent with post prandial presentation without signs of ileus, obstruction or foreign material.

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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine contained echogenic, nonshadowing ingesta likely consistent with post prandial presentation without signs of ileus, obstruction or foreign material.

SEX

MN

Normal visible colon wall layers were present with subjective semi-formed feces in lumen.

AGE

15 years

Pancreas

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

WEIGHT

3.8 kg

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

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ULTRASONOGRAPHIC FINDINGS

- Mild dependent urinary bladder mineral
- Bilateral chronic renal changes with medullary mineral to nonobstructive renolithiasis
- Bilateral adrenal nodules, more prominent in the left adrenal gland - suspect hyperplasia or adenomas
- Hepatopathy exhibiting parenchymal remodeling and intermittent nonspecific yet likely benign mid intraparenchymal nodules
- Immature gallbladder mucocele

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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The patient may be passing small amounts of mineral from the kidneys into the urinary bladder. Correlation for full urinary workup including urinalysis culture and sensitivity is suggested.

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The overall liver was nonspecific yet consistent with chronic benign hepatopathy. Considerations may include vacuolar hepatopathy and nonobstructive cholestasis, given the ALP / GGT elevation with potential for primary or concurrent inflammatory hepatopathy or hepatobiliary disease, given the ALT elevation and presence of immature gallbladder mucocele. The nodules are likely indicative of areas of nodular to regenerative hyperplasia or small lipogranulomas without overt evidence of neoplastic criteria. Hepatosupportive medications including Denamarin and Ursodiol may prove beneficial.

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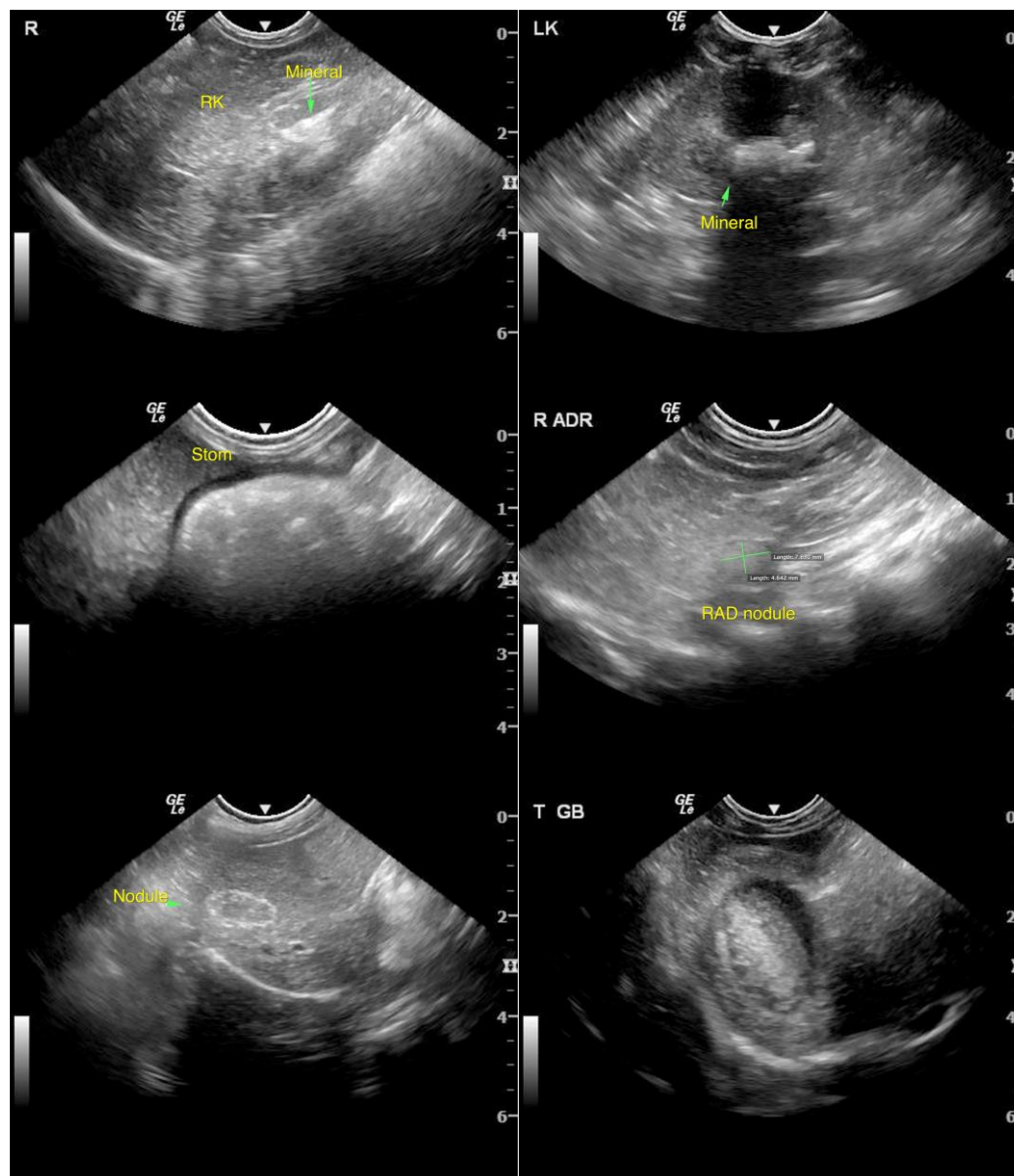
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Full adrenal work up is suggested if clinical signs consistent with adrenal hyper functionality, given the bilateral adrenal nodules. Technically, the possibility of emerging adrenal neoplasia i.e., pheochromocytoma or adenocarcinoma could be possible. Systemic BP assessment is suggested to assess for evidence of hypertension which may allude to a pheochromocytoma, along with sonographic monitoring of both the gallbladder and bilateral adrenal nodules, would be ideal.





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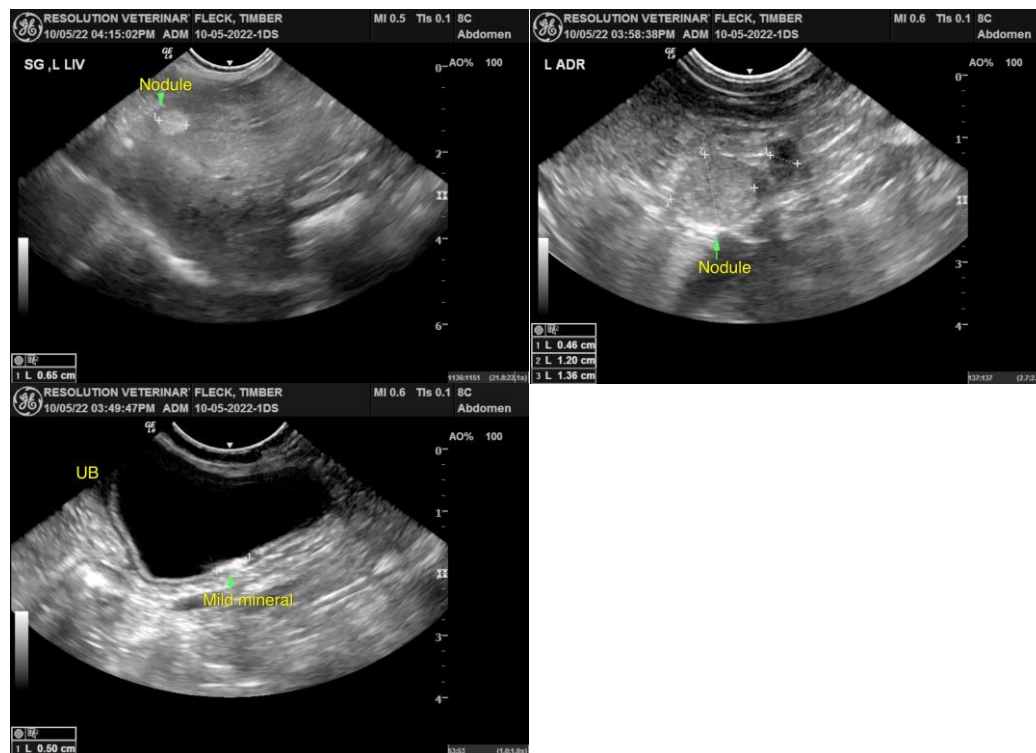
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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