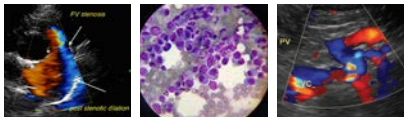
IMAGING PERFORMED BY

IntraPet.com



SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™

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DATE

7/15/22

PATIENT

Rusty Hale

SPECIES

Canine

BREED

Goldendoodle

SEX

Neutered Male

AGE

4/16/09

WEIGHT

44.8 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Andi Parkinson RDMS

HOSPITAL NAME

Timonium AH

REFERRING VET

Dr. Falkowski

INVOICE

39594

PRESENTING CLINICAL SIGNS

7/7/22: 5lbs of weight loss in the past year. Decreased appetite the past few months. Eats about half of what he used to daily. Increased ocular discharge. PE: Eyes: moderate white mucoid discharge, mild episcleral injection OU. Ears: mild brown discharge AU; remaining exam unremarkable.

Current Medications: Simparica Trio.
Lab Results: Bloodwork 7/7/22 CBC: Mild neutrophilia 14.21K/uL Ddx: stress, inflammation Mild thrombocytosis 525K/uL Ddx: rebound, inflammation, stress. Chemistry: Mild hypoproteinemia 5.0g/dL Ddx: maldigestion/malabsorption, liver disease, other Mild hypoalbuminemia 2.5g/dL Ddx: maldigestion/malabsorption, liver disease, PLE, other
Mildly elevated ALP 171U/L Ddx: infection, inflammation, toxin, neoplasia, cushings. T4: 1.4ug/dL. fT4: 0.6ng/dL. UA (free catch): USG 1.042, pH 5.5, inactive sediment. 4Dx Snap Test: neg x 4. Fecal: negative
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Patient sedated with Torbugesic.
Stat Report: Not requested.

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 (5.88 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 (5.77 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 0.94 cm at the cranial pole, 0.74 cm at the caudal pole, and 2.36 cm in length. It is observed in its normal position cranial to the left renal artery. It is somewhat abnormal in appearance in that there is as hyperechoic nodule visualized within the parenchyma of the cranial pole of the adrenal. This lesion does not appear to change the shape of the adrenal gland in any way, and there is no evidence of vascular invasion.

The right adrenal gland is normal in size measuring 0.57 cm at the cranial pole, 0.77 cm at the caudal pole, and 2.78 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 somewhat abnormal in appearance in that there is a hyperechoic nodule in the mid portion of the adrenal gland, measuring 0.51 cm x 0.43 cm. This does not deviate the shape of the adrenal gland, and no obvious vascular invasion is observed.

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.

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. No focal nodules or cystic lesions are observed.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. 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 0.34 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 visualized in the cranial pole of the left adrenal gland and mid body of the right adrenal gland – The significance of these lesions is unclear. This could represent mild hyperplasia, metastatic disease, benign tumors, or bilateral cancerous tumors (pheochromocytoma, carcinoma, etc.).

- Mildly heterogeneous liver – 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.

- Moderate gallbladder debris – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No focal lesion is visualized to explain the low albumin reported. There are hyperechoic nodules visualized in both adrenal glands. Neither of these lesions significantly deviate the parenchyma, and the appearance trends towards a more benign process, although underlying neoplasia cannot be ruled out. Consider the following:

- 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)

- 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). Surgical removal with bilateral disease would be less common, and only indicated in rare cases.

- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma

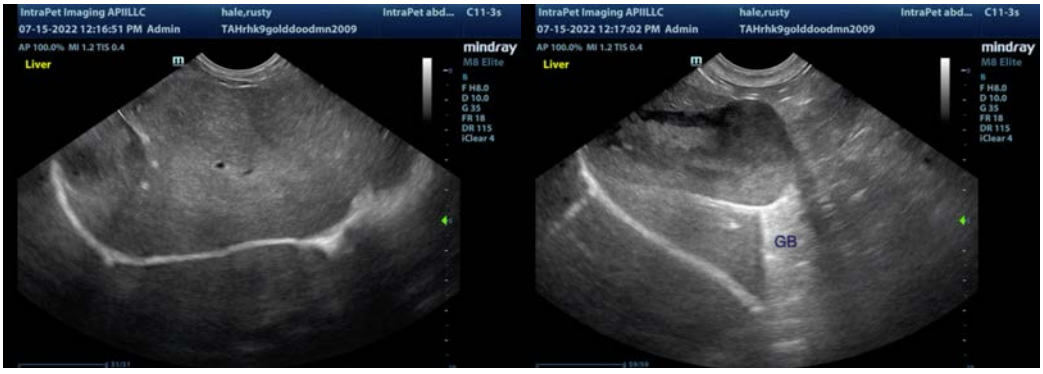
- If no symptoms of cushings are present, consider either referral for surgery or continued monitoring with ultrasound (in 3-4 months).

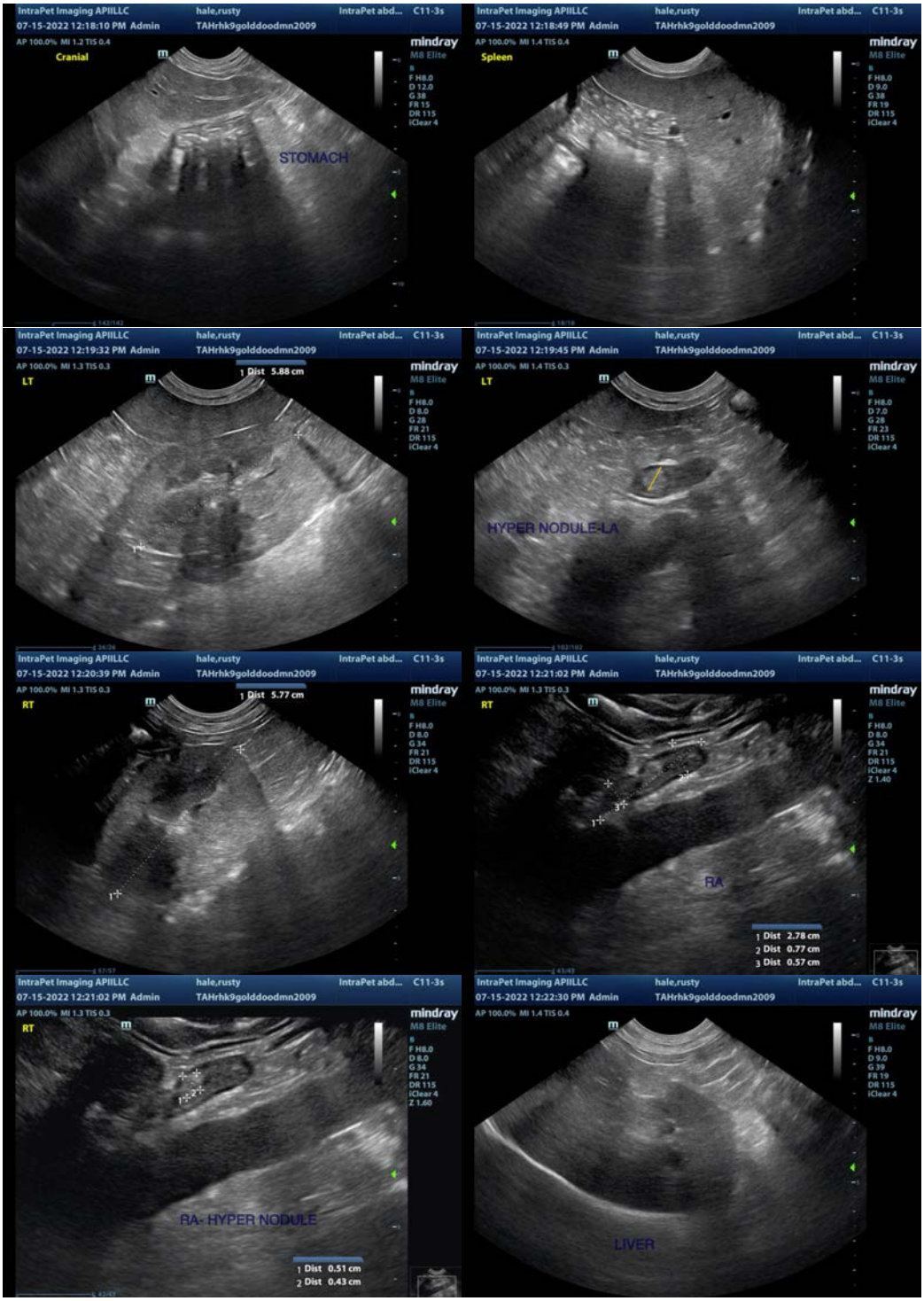
- Many of these nodules can be benign and incidental in nature, unfortunately that is difficult to determine with a single ultrasound.

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

I suspect the lesions in the adrenals are not related to the primary clinical problem. Consider pre- and post-prandial bile acids to evaluate liver function, and a urinalysis/UPC to look for evidence of urine protein loss. If these values are normal, then GI protein loss would seem most likely, and you could consider a GI panel to Texas A&M for a qualitative PLI, TLI, cobalamin and folate to further evaluate for illness.

If this process is narrowed down to a gastrointestinal problem, and symptoms persist despite a novel protein/hydrolyzed protein prescription diet, symptomatic treatment for gastroenteritis, etc., then GI biopsies could be considered.

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Cranial
STOMACH
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Spleen
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LT
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HYPER NODULE-LA
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RT
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RA
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2 Dist 0.77 cm
3 Dist 0.57 cm
RA- HYPER NODULE
1 Dist 0.51 cm
2 Dist 0.43 cm
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LIVER
mindray
M8 Elite

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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