IMAGING PERFORMED BY

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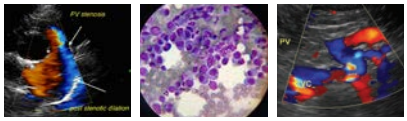

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DATE

5/2/23

PATIENT

Perseus Armiger

SPECIES

Canine

BREED

Chihuahua

SEX

Neutered Male

AGE

9/26/13

WEIGHT

25.1 Pounds

INTERPRETED BY

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

HOSPITAL NAME

Timonium AH

REFERRING VET

Dr. Stephens

INVOICE

47027

PRESENTING CLINICAL SIGNS

Presented for lethargy and weight gain, progressive, over the last year. Suspected hypothyroidism and sent general blood panel. Low T4, but severely elevated ALP with elevated GGT

Current Medications: None listed.
Lab Results: T4<0.4, ALP 12,742, GGT 55, ALT 209.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Andi Parkinson, BS, RDMS.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall is diffusely mildly thickened (0.27 cm), and the mucosa is mildly irregular. The trigone, ureteral papillae, and visible urethra (to a depth of 2cm) appear normal with no evidence of severe mucosal irregularities, masses or cystic calculi. Findings are most consistent with bacterial cystitis or lack of urine distension. Recommend urinalysis and culture.

The visualized areas of prostate and surrounding tissue appear normal. Unfortunately, the prostate is not fully visualized likely due to its intrapelvic location. Correlate with rectal exam findings.

The left kidney has a normal shape and size (4.92 cm in length). Overall echogenicity is increased with a very hyperechoic cortical region and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion, but there are numerous small non-obstructive nephroliths and some larger shadowing nephroliths visualized. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.09 cm in length). Overall echogenicity is increased with a very hyperechoic cortical region and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion, but there are numerous small non-obstructive nephroliths and some larger shadowing nephroliths visualized. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is large in size (1.01 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 large in size measuring 0.94 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.

Liver
The liver is large in size with smooth peripheral margins. The parenchyma is hyperechoic and homogenous in echotexture. The visible portions of the vasculature and biliary tract appear normal. There are numerous ill-defined hypoechoic nodules visualized in the parenchyma, generally measuring between 0.50-1.0 cm in diameter.

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 present and a large amount of pinpoint shadowing debris, most consistent with sandy debris and choleliths. The cystic and common bile ducts are normal/not visible.

Gastrointestinal
The stomach contains a large amount of shadowing ingesta. 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. Duodenum wall measures 0.41 cm. Jejunum wall measures 0.31 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.

PRIMARY FINDINGS

- Bilateral adrenomegaly – The bilateral adrenomegaly could be consistent with bilateral hyperplasia (e.g., secondary to pituitary-dependent hyperadrenocorticism), bilateral infiltrative neoplasia, inflammatory adrenal disease, other. Correlation with clinical findings is recommended.

- Hyperechoic renal cortices and non-obstructive nephroliths visualized in both kidneys – Hyperechoic foci are visualized in the kidney most consistent with nephroliths. There is no current evidence of obstructive disease. Correlate findings with abdominal radiographs, urinalysis, and culture. Continued monitoring is warranted for progression/obstruction.

- Large, hyperechoic liver with ill-defined 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 appearance of the hypoechoic nodules trends towards a benign process.

- Shadowing/mineralized debris and choleliths visualized within the gallbladder – Recommend continued monitoring +/- Ursodiol therapy.

SECONDARY FINDINGS

- Mildly thickened 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.

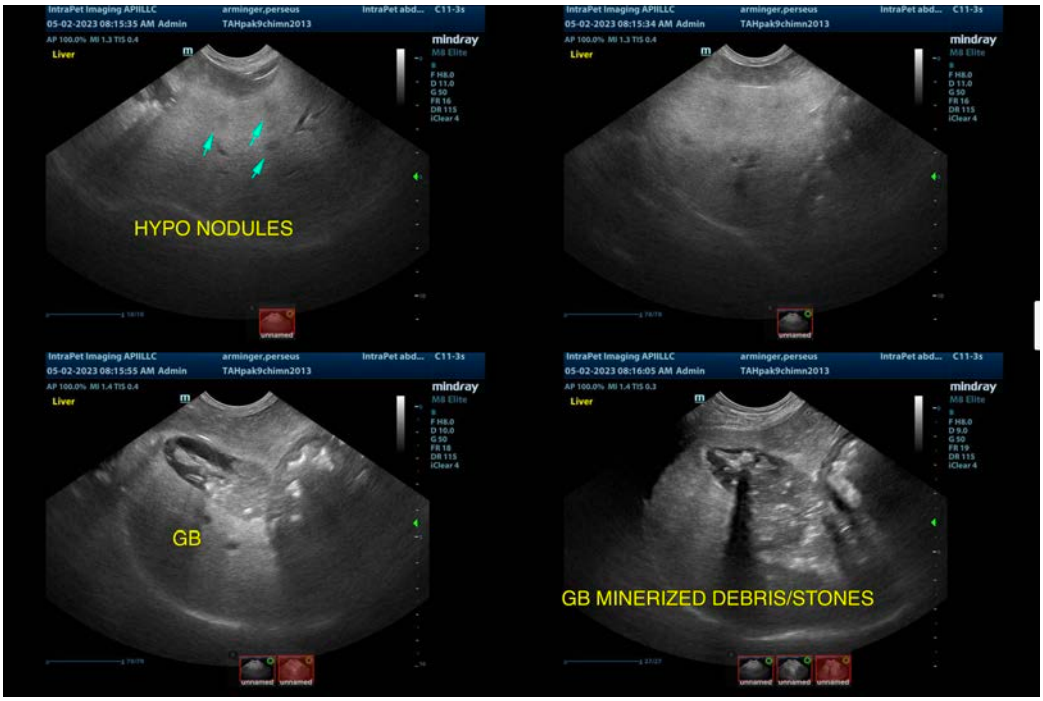
- Large shadowing debris visualized within the gastric lumen – Correlate with feeding history. If the patient was adequately fasted, consider such differentials as delayed gastric emptying or a partial outflow tract obstruction (none observed).

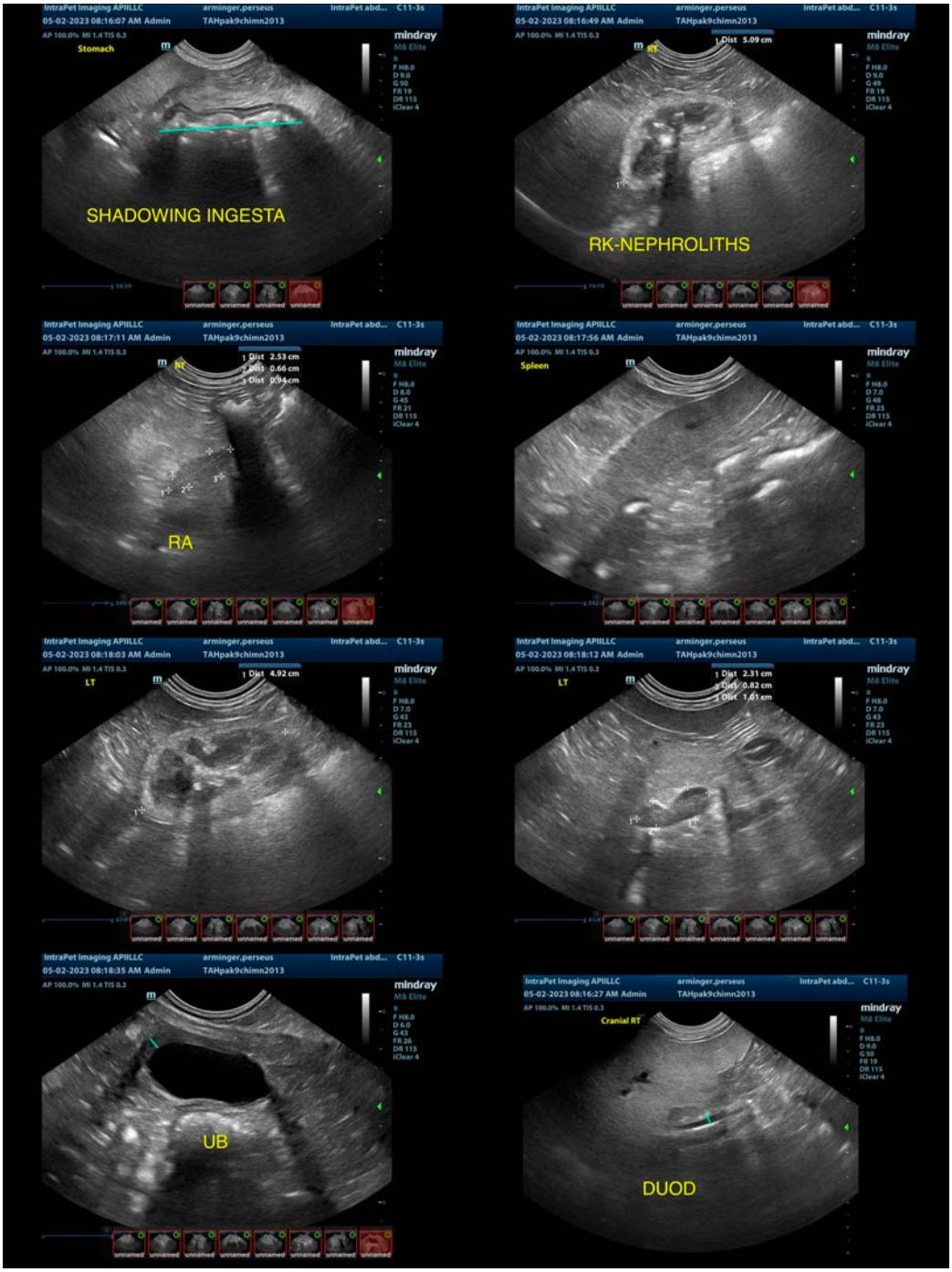
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The combination of the very large hyperechoic liver, the significant elevation in ALP, and the large adrenals in this individual is suspicious for possible pituitary dependent hyperadrenocorticism. Recommend adrenal function testing if the patient is showing clinical signs and consider treatment if indicated.

There are changes visualized in both kidneys, most consistent with mineralization and some non-obstructive nephroliths. Additionally, there is mineralization and some small stones visualized within the gallbladder, but no evidence of an obstruction at this time. Recommend continued monitoring +/- Ursodiol therapy.

The urinary bladder wall appears mildly thickened. This could be due to lack of distention with urine or could be consistent with mild cystitis. Correlate with a urinalysis +/- culture.




SHADOWING INGESTA
RK-NEPHROLITHS
RA
Spleen
LT
LT
UB
Cranial RT
DUOD

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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