IMAGING PERFORMED BY

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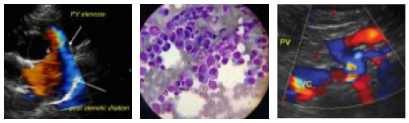

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DATE

7.14.2023

PATIENT

Necco Brown

SPECIES

Canine

BREED

Chihuahua

SEX

Neutered Male

AGE

9/28/2009

WEIGHT

15.5 lbs

INTERPRETED BY

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

HOSPITAL NAME

Banfield Abingdon

REFERRING VET

Dr. Aylward

INVOICE

13702

PRESENTING CLINICAL SIGNS

Elevated blood liver values while on Denamarin

Current Medications: Denamarin- started 6/6/23, Vetoryl 10 mg SID- started 7/8/23.
Lab Results: Hepatic Profile: ALB 3.4 (WNL) (Ref 2.2 - 3.9) (Last value 3.5 on 06/06/23 - stable)
ALP 1333 (H) (Ref 23 - 212) (Last value 548 on 06/06/23 - worse), ALT 293 (H) (Ref 10 - 125) (Last value 166 on 06/06/23 - worse), GGT 35 (H) (Ref 0 - 11) (Last value 12 on 06/06/23 - worse), TBili 0.3 (WNL) (Ref 0.0 - 0.9) (Last value 0.4 on 06/06/23 - stable)
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Rachel Brilhart, RDMS.

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 2 cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The prostate is normal in size (0.58 cm) and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

The left kidney has a normal shape and size (4.04 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney is small in size (3.00 cm) and slightly irregular, with decreased 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 borderline large (0.91 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 (1.36 cm at the caudal pole) and slightly irregular. 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. There is a small hyperechoic focus seen in the parenchyma measuring 0.5 cm consistent with a small mineralization.

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 large 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 is a well-defined hyperechoic solid mass effect visualized deep in the left side of the liver (2.15 x 2.31 cm). Additionally, there is a very small cystic lesion visualized (0.71 cm).

The gall bladder lumen is significantly distended. Some areas of the wall appear mildly thickened with adherent debris and some areas have early mucosal stranding and organization of the debris into an early mucodele. There is a large amount of primarily non-organized echogenic debris present as well. There is no evidence of bile duct dilation.

Gastrointestinal

The stomach is moderately dilated with fluid and irregular shadowing material most consistent with normal ingesta and gas. 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 layering 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. The duodenum measured as normal (between 0.3-0.5 cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47 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

Findings

- Bilateral adrenomegaly with a slightly irregular right adrenal - 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. There is a small hyperechoic mineralization associated with the right adrenal of unknown significance and it is mildly irregular. Recommend continued monitoring of this gland.

- Decreased corticomedullary junction in both kidneys with a slightly small right kidney – The bilateral renal findings are consistent with age-related change. The right kidney appears slightly sclerotic, possibly consistent with previous renal damage and atrophy.

- Large, heterogenous liver with a small hyperechoic mass effect and a small cystic lesion – 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. The hyperechoic nodule deep on the left side is most consistent with a primary hepatic lesion. Generally, the appearance of the lesions trends toward a more benign process (adenoma, cystadenoma, carcinoma, other)

- Distended gallbladder with a large amount of intraluminal debris and early organization of the gallbladder debris – A large amount of debris is evident in the gall bladder with no evidence of a mature mucocele or associated inflammation at this time. This could represent an early mucocele or cholestasis, with minimal evidence of associated inflammation at this time. Continued monitoring of lab-work and ultrasound are warranted for progression of this lesion. Ursodiol therapy could be considered.

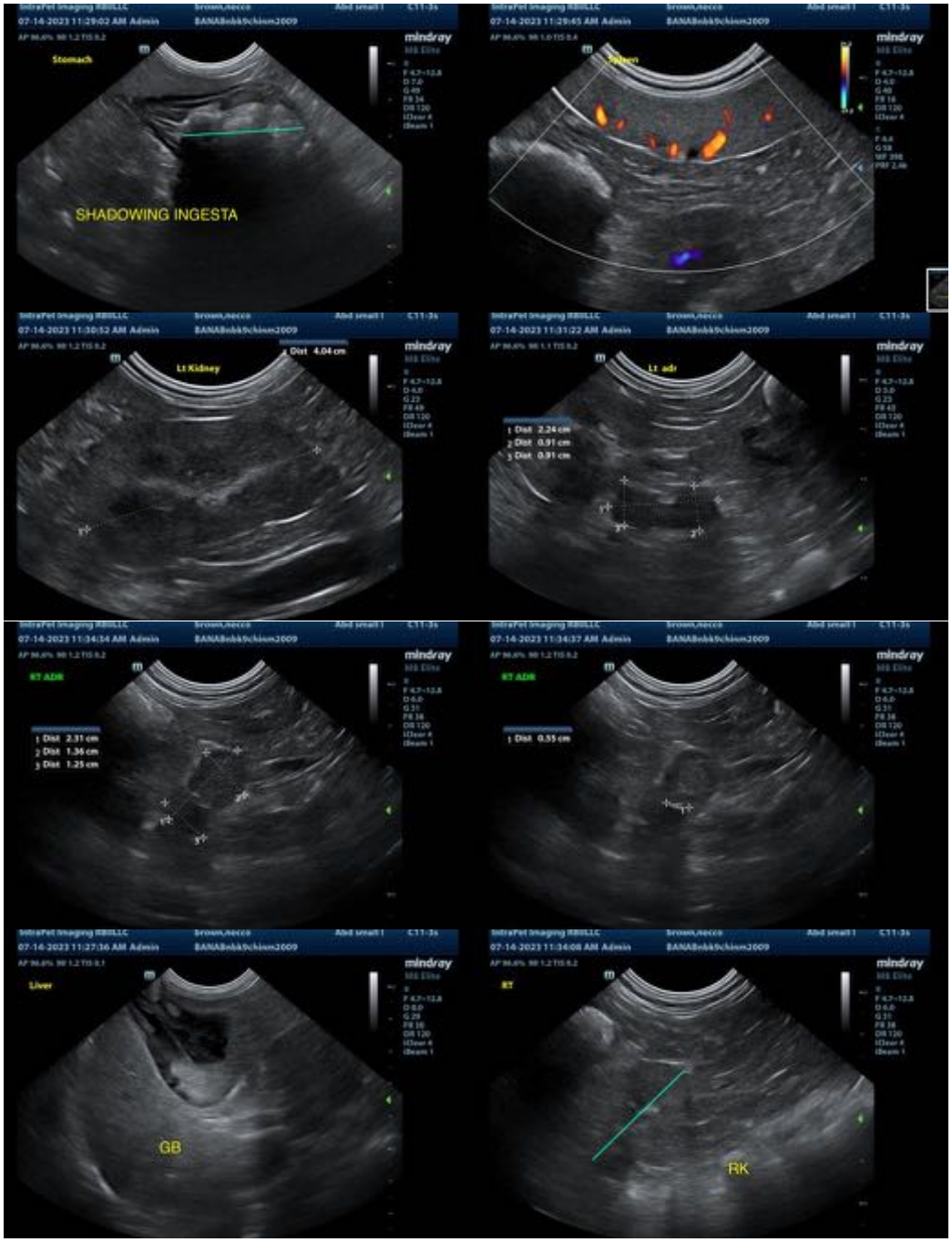
- Moderate shadowing ingesta within the gastric lumen - Correlate with the feeding history and abdominal radiographs. If the patient was adequately fasted consider such differentials as delayed gastric emptying, a partial outflow tract obstruction (none seen) or ingested foreign material.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is a small hyperechoic mass effect deep on the left side of the liver. This is likely a primary hepatic lesion, but is generally somewhat benign in appearance, possibly consistent with an adenoma, hyperplasia, etc. It is deep and unlikely to be easily sampled. Recommend continued monitoring with ultrasound. The remaining changes to the liver are most consistent with a vacuolar hepatopathy and the Cushing's disease already diagnosed. If this patient is sick, you could consider a liver function test and a fine-needle aspirate of the liver.

Additionally, the gallbladder is significantly distended with intraluminal debris and some very mild early organization consistent with a very early developing mucocele. There is no obvious associated inflammation, but there could be some early cholecystitis. If liver enzyme elevations are progressing, recommend starting chronic Ursodiol therapy, +/- 1-2 weeks of a broad-spectrum antibiotic (given concurrently with the probiotics spaces 2 hours apart), to see if this helps with liver enzyme elevations. Recommend continued monitoring of the gallbladder for possible progression of this lesion.

There are changes visualized associated with both kidneys consistent with chronic progressive age-related renal disease. Consider a blood pressure, urinalysis and culture, particularly if the patient is azotemic.



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.

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