

**DATE PRESENTING CLINICAL SIGNS**

8.11.2022 Chronic elevated liver values. Monitoring abdomen for any progressing changes.

PATIENT

Current Medications: Denamarin since 2/2020, HWP and FTP.

Iona Riston

Lab Results: 5/20- ALP 1655, ALT 141. 1/11/21- ALP 708, ALT 112. 1/15/21- ALP 398, ALT 81. 3/21- ALP 1137, ALT 388. 10/21- ALP 1413, ALT 133. 12/21- ALP 769, ALT 181. 4/22- ALP 613, ALT 252.

Date of Previous IntraPet Ultrasound: 5/7/20. See attached.

Sedation: Not required to complete full diagnostic ultrasound.

SPECIES

Stat Report: Not requested.

Canine

Imaging Performed By: Rachel Brillhart, RDMS.

BREED**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

Jack Russell Terrier

Urinary System

The **urinary bladder** wall is normal in thickness and the mucosal surface is smooth. The bladder is moderately distended. A scant amount of suspended, echogenic debris is observed within the lumen. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2 cm, are normal.

SEX

Spayed Female

AGE

11/19/2012

The **left kidney** is normal size (4.61 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

WEIGHT

15.2lbs

The **right kidney** is normal size (4.61 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

INTERPRETED BY**Adrenal Glands**

Andrea Nicastro, DMV,
Diplomate DACVIM
(Small Animal
Internal Medicine)

The **left adrenal gland** is enlarged (1.22 cm at cranial pole) (0.63 cm at caudal pole) (2.88 cm in length); with a prominent cranial pole. A 1.20 x 1.18 cm hyperechoic to slightly heterogenous nodule is observed at the cranial aspect. Glandular echogenicity and detail in the remainder of the gland are unremarkable. The phrenicoabdominal vein and surrounding vasculature are normal.

HOSPITAL NAME

Banfield Columbia

The **right adrenal gland** is normal size (0.70 cm at cranial pole) (0.47 cm at caudal pole) (2.13 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

REFERRING VET

Dr. Landon

Spleen

The **spleen** is normal in size (1.17 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

INVOICE

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Liver

The **liver** is subjectively normal in size with normal curvilinear peripheral contours. The parenchyma is isoechoic relative to the spleen and exhibits mild heterogeneity. A 0.82 hypoechoic nodule is seen approximately mid-liver. Hepatic vasculature and biliary tracts are of normal volume with no evidence of congestion.

The **gall bladder** lumen is moderately distended. The wall is thin and smooth. A scant amount of echogenic debris is adhered to the luminal surface. In addition, a small amount of suspended, echogenic debris is observed. The cystic and common bile ducts are normal/not seen.

Gastrointestinal

The **stomach and intestine** are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

Pancreas

The right limb of the **pancreas** is normal in size, with normal curvilinear peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic inflammation or effusion.

Free Abdomen

The **peritoneal cavity** is normal. There is no evidence of inflammation or effusion. The abdominal **lymph nodes** are normal/not visible.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

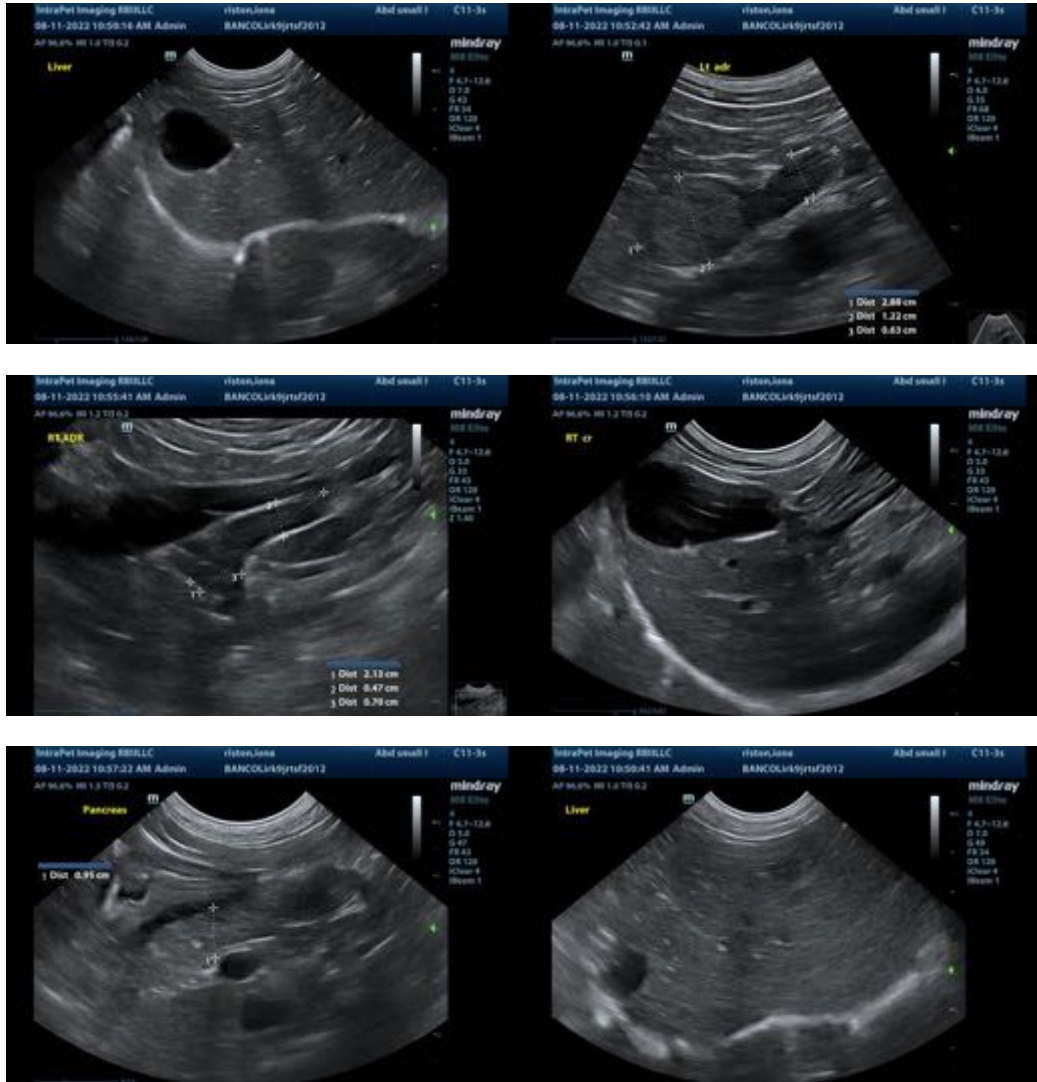
- Nonspecific diffuse hepatopathy. Differentials include inflammatory disease (i.e., chronic active hepatitis, bacterial cholangiohepatitis), hepatotoxicosis (i.e., copper), infiltrative neoplasia (unlikely), fibrosis, other hepatopathy, +/- concurrent benign age-related changes (i.e., regenerative nodular hyperplasia).

Secondary Findings

- Age-related pancreatic remodeling
- Bilateral nonspecific, age-related degenerative adrenal changes. The left adrenal nodule trends toward the benign (i.e., nodular hyperplasia) with a lower possibility of an emerging tumor. The nodule is similar in size compared to the previous sonogram.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

In order to get a definitive diagnosis, hepatic tissue sampling (fine-needle aspirate or surgical biopsy) should be considered. Hepatic cytology is beneficial in assessing for vacuolar hepatopathy and round cell neoplasia but is less useful in diagnosing inflammatory hepatopathies and fibrosis. Surgical biopsies are more likely to yield a definitive diagnosis. If pursued, acquisition of additional hepatic tissue samples for potential copper quantitation is recommended along with aerobic and anaerobic bile cultures. Prior to tissue sampling, three-view thoracic radiographs and clotting times (PT/PTT) are recommended.



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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