



DATE PRESENTING CLINICAL SIGNS

3/21/23 Has Cushings disease. Elevated liver enzymes on bloodwork.

PATIENT Current Medications: Vetoryl, Vetmedin.

Levi Ledford Lab Results: ALT 455, ALKP 896.
Date of Previous IntraPet Ultrasound: No previous.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

SPECIES Imaging Performed By: Rachel Brillhart, RDMS.

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

BREED *Urinary System*

Beagle

Urinary bladder is only mildly distended. Visible contents are anechoic. Urinary bladder wall is unable to be fully assessed for pathology without further distension. No visible masses or cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface. If there are urinary signs and/or concern for urinary bladder pathology, reassessment after complete filling is recommended.

SEX

Neutered Male

Prostate is normal in size, echotexture and echogenicity for a neutered male.

AGE

1/13/10

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia, mineral or infarcts observed. The left kidney measures 5.71 cm. The right kidney measures 4.48 cm.

WEIGHT

24.5 Pounds

INTERPRETED BY

Beth Johnson, DVM
DACVIM

Adrenal Glands

Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The right adrenal gland measures 2.24 cm long x 0.71 cm at the cranial pole and 0.63 cm at the caudal pole. The left adrenal gland measures 2.24 cm long x 0.65 cm at the cranial pole and 0.71 cm at the caudal pole.

HOSPITAL NAME

Madonna Vet Clinic

Spleen

The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

REFERRING VET

Dr. Brockett

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is mottled by multifocal discrete hypoechoic nodules of varying sizes "moth-eaten". In the caudoventral liver, there is a 4.7 cm x 2.1 cm discrete heterogeneous hypoechoic mass. Visible vasculature and biliary tree appear normal without distension or congestion.

INVOICE

46065

Gallbladder is moderately distended with anechoic bile as well as mild suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The area of the pancreas contains irregular hyperechoic pancreatic remodeling.

Free Abdomen

There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

PRIMARY FINDINGS

- **Bilateral adrenomegaly** – Consistent with this patient's historical diagnosis of hyperadrenocorticism and Vetoryl therapy.
- **Hyperechoic pancreas** – This finding is suggestive of pancreatic fibrosis, possibly secondary to chronic pancreatitis. A TLI is recommended to rule out exocrine pancreatic insufficiency (EPI), especially if clinical signs (weight loss, diarrhea, etc.) are present.
- **Nodular/heterogeneous liver** – This change can occur with a benign process such as nodular hyperplasia, or in this case steroid or vacuolar hepatopathy or extramedullary hematopoiesis, or even chronic inflammatory disease, etc. However, given the marked heterogeneity as well as the discrete mass described above, infiltrative neoplasia such as round cell neoplasia or even metastatic neoplasia should be considered and ruled out.

SECONDARY FINDINGS

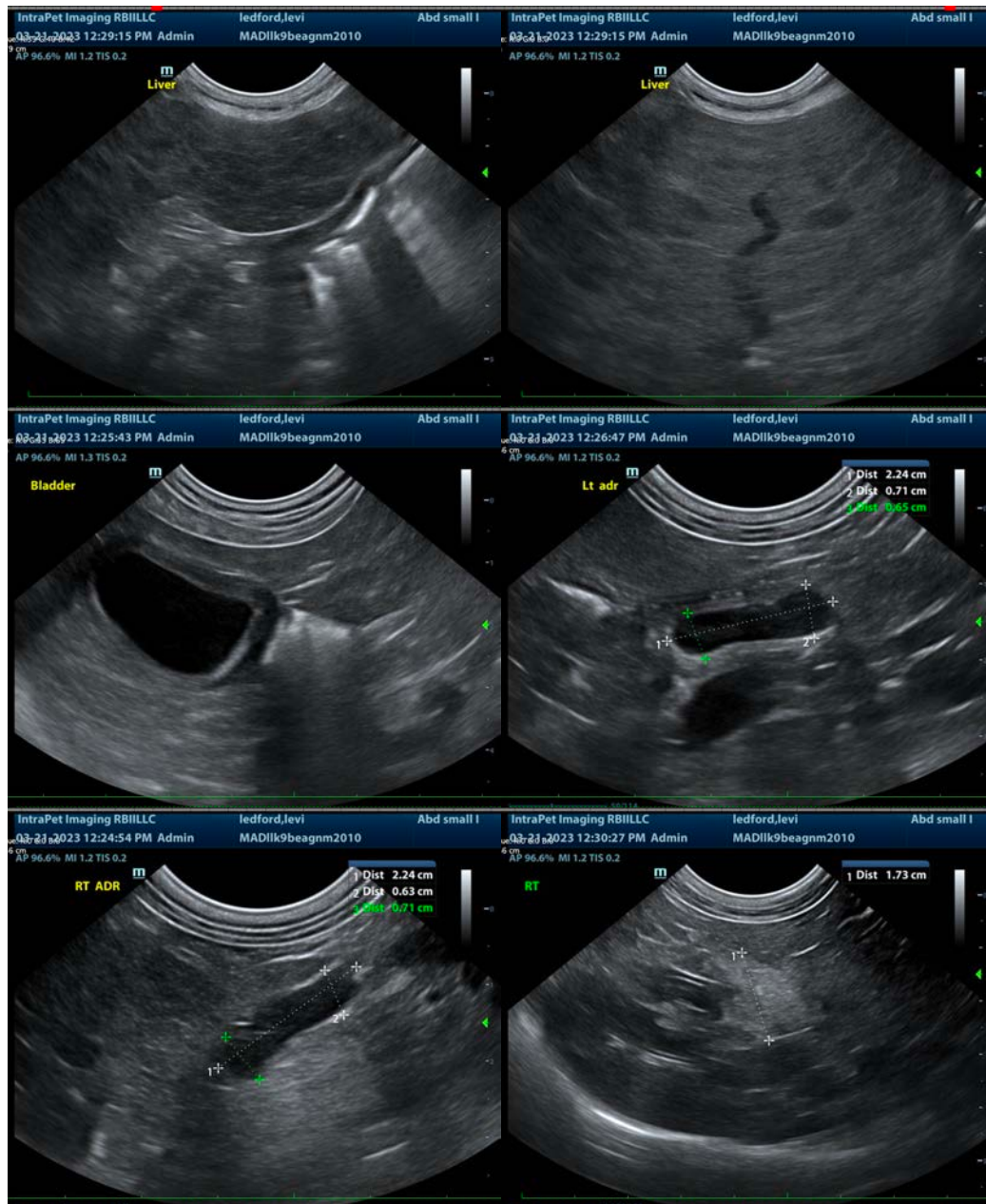
- Age related kidney changes
- **Mild gallbladder debris** - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.

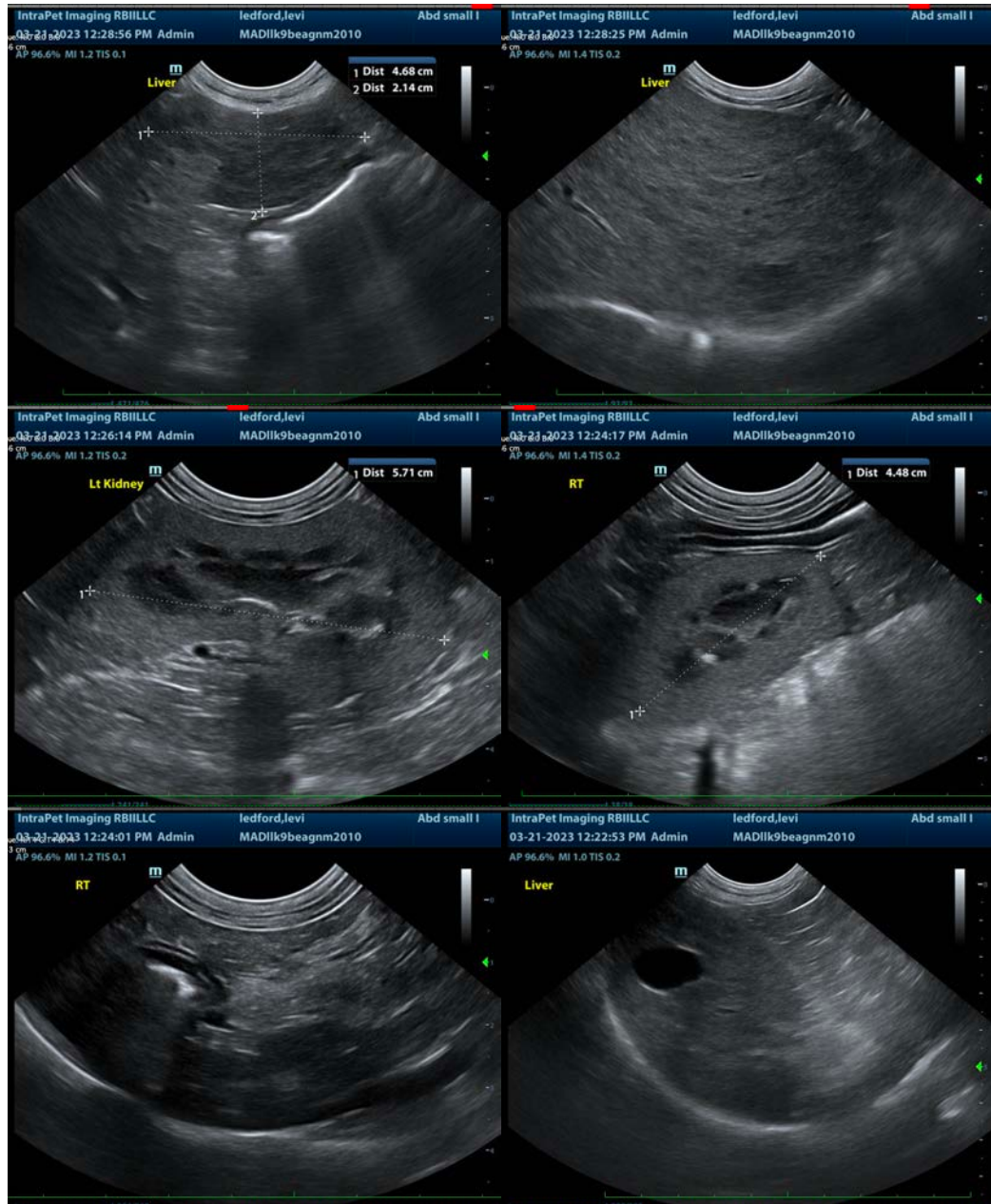
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

This patient's liver changes could be benign and secondary/related to the hyperadrenocorticism. However, the change is a more severe degree than is typically seen with hyperadrenocorticism alone. Therefore, recommendations include:

- Three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.

- A fine needle aspirate of the liver (both the diffuse change as well as the focal mass) is recommended if patient's coagulation status is appropriate.
- Additionally, given the pancreatic changes, a gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.





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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