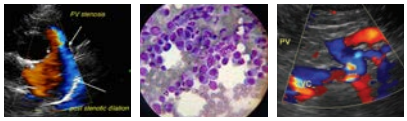
IMAGING PERFORMED BY

IntraPet.com



SonoPath
Clinical Sonography & Telecytology
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DATE

6/29/23

PATIENT

Maui Malkus

SPECIES

Canine

BREED

Chihuahua

SEX

Spayed Female

AGE

4/8/14

WEIGHT

11.34 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

HOSPITAL NAME

Banfield Towson

REFERRING VET

Dr. Chadha

INVOICE

43600

PRESENTING CLINICAL SIGNS

PU/PD.

Current Medications: None.
Lab Results: ALKP ~4000.
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 contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

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. Small bilateral cortical cysts present. The right kidney measures 5.67 cm. The left kidney measures 5.61 cm.

Adrenal Glands

Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. A hyperechoic nodule is noted in the cranial pole of the left adrenal gland. Nodule does not disrupt normal shape and/or architecture. Visible surrounding vasculature appears normal. The right adrenal gland measures 0.78 cm at the cranial pole and 0.82 cm at the caudal pole. The left adrenal gland measures 1.03 cm at the cranial pole and 1.02 cm at the caudal pole.

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.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is mottled by multifocal discrete hypoechoic nodules of varying sizes “moth-eaten”. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as 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 visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is 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

Pancreas is prominent in size with swollen irregular contour. Parenchyma is heterogenous characterized by hyperechoic tissue remodeling intermixed with ill-defined hypoechoic nodules. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

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

In the right cranial abdomen, there is an irregular hypoechoic 1.4 cm x 2.0 cm structure that could represent a pancreatic nodule versus a lymph node.

PRIMARY FINDINGS

- Bilateral adrenomegaly – consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism vs stress or normal variant. Interpret in combination with clinical signs of hyperadrenocorticism.

- Hyperechoic adrenal nodule (cranial pole left adrenal gland) – Differentials include primary adrenal cortical adenoma or adenocarcinoma, pheochromocytoma, myelolipoma, adrenal hyperplasia secondary to pituitary disease or metastatic disease. Ultrasound alone cannot differentiate between functional and non-functional nodules and/or between benign and malignant disease. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest adrenal disease) are most often incidental and should be monitored.

- The nodular liver could represent a marked degree of nodular hyperplasia or other benign steroid vacuolar hepatopathy, extramedullary hematopoiesis, etc. However, given the degree of change, infiltrative neoplasia including round cell neoplasia, metastatic disease, etc. is also possible and should be ruled out via tissue sampling.

- 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.

- Pancreatic nodular hyperplasia – Infiltrative neoplasia cannot be ruled out but is considered less likely.

- Cranial abdominal lymphadenopathy cannot be ruled out versus pancreatic nodule and should be monitored versus sampled to help differentiate underlying etiology/pathology.

SECONDARY FINDINGS

- Age related kidney changes

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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 +/- the pancreas and/or cranial abdominal lymph node is recommended if patient's coagulation status is appropriate.

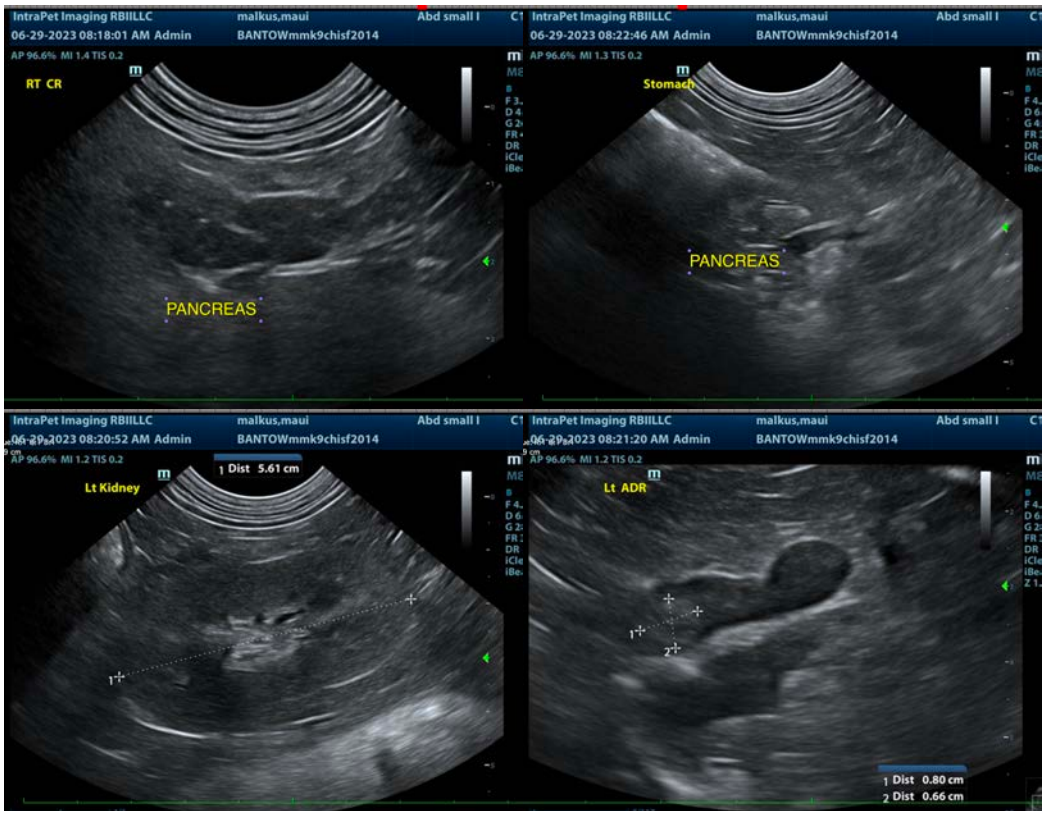
The described adrenal gland, liver and gallbladder changes could all be suggestive of hyperadrenocorticism. Pending results, and given the reported clinical signs also suggestive of hyperadrenocorticism, further testing is recommended:

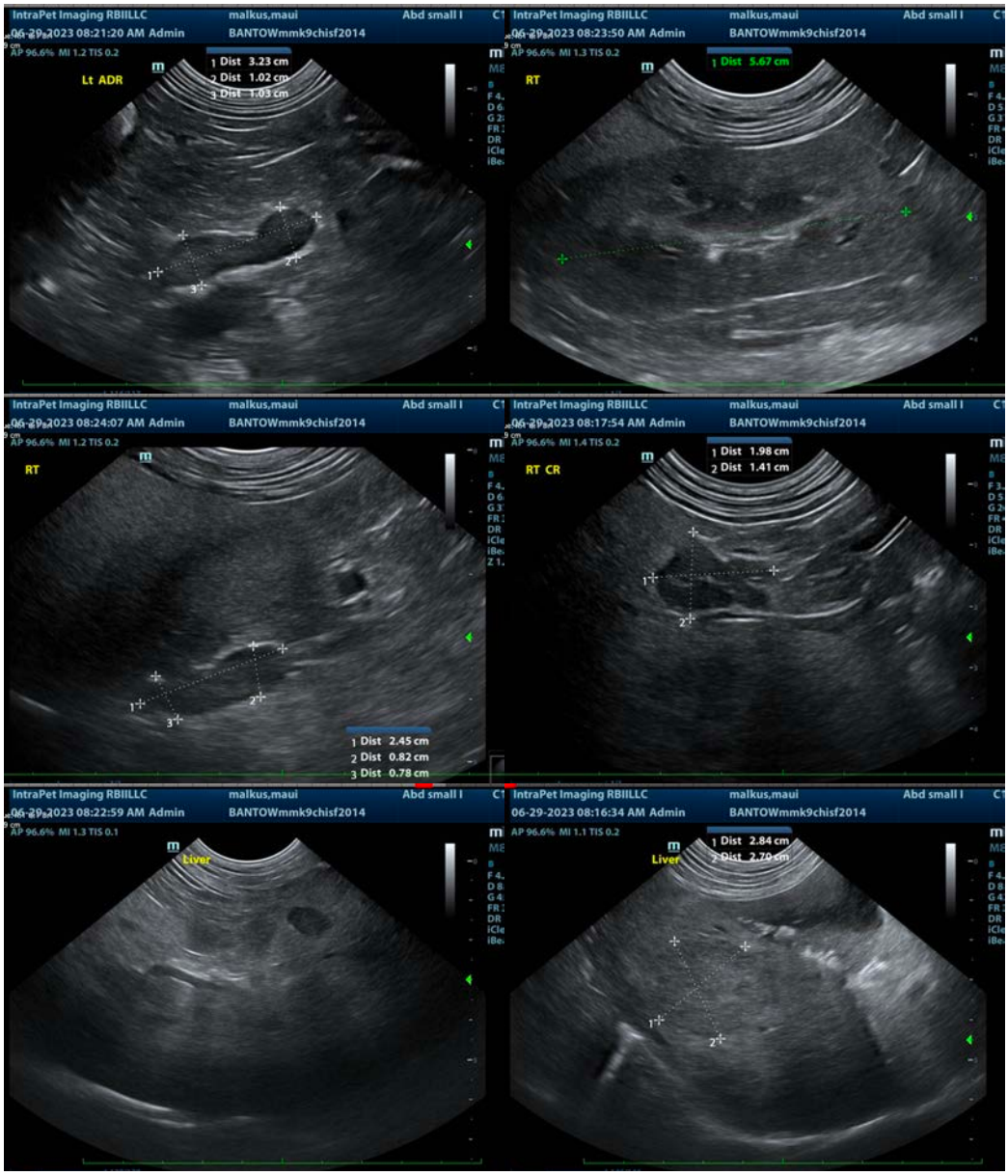
A LDDS test is warranted.

If a LDDS test has been evaluated with a normal result, investigation of possible atypical hyperadrenocorticism with a full ACTH stimulation adrenal panel to the University of Tennessee could be considered.

If not recently evaluated, blood pressure is recommended.

Additionally, if not recently evaluated, a urinalysis and, if indicated based on urinalysis results, urine culture is also recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is 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.

Beth Johnson, DVM, DACVIM
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