

**DATE**

3/10/22

PRESENTING CLINICAL SIGNS

History: Heavy panting, pacing and not able to get comfortable. BW shows elevated liver nz.

PATIENT

Lexi Newkirk

Current Medications: Gabapentin, Clavamox.

Lab Results: See attached.

Radiographs: Liver very mildly enlarged, questionable opacity in the cranial abdomen on lateral but this is not noted on v/d (r/o end on intestine vs mass).

SPECIES

Canine

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

BREED

Shih Tzu

Imaging Performed By: Rachel Brillhart, RDMS.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**SEX**

Female

Urinary System

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.

AGE

2/25/07

The left kidney is 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 echogenicity and mild loss of corticomedullary distinction. Non-obstructive areas of mineralization/nephroliths are noted, primarily in the diverticular of the kidney. There is no evidence of obstruction/pyelectasia observed. The left kidney measures 3.86 cm.

WEIGHT

19.9 Pounds

The right kidney is 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 echogenicity and mild loss of corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. The right kidney measures 4.12 cm.

INTERPRETED BYBeth Johnson, DVM
DACVIM**Adrenal Glands**

The bilateral adrenal glands are enlarged in size. Normal shape and contour are maintained. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. Two, small hyperechoic nodules are noted in the cranial pole of the left adrenal gland. Nodule does not disrupt normal shape and/or architecture. The left adrenal gland measures 0.78 cm cranial pole and 0.4 cm caudal pole. The right adrenal gland measures 0.85 cm cranial pole and 0.73 cm caudal pole.

HOSPITAL NAME

Bayside AMC

REFERRING VET

Dr. Sims

Spleen

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). Splenic vasculature appears normal. Multifocal well-demarcated hyperechoic homogenous nodules were noted.

INVOICE

14254

Liver

Liver is subjectively enlarged with rounded margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature appears normal.

Gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

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

Pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is no appreciable lymphadenopathy or free fluid present in these images. There is also no evidence of an intraabdominal mass in these images.

Other

The uterus and ovaries are visualized without any evident pathology.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Bilateral adrenomegaly is consistent with adrenal hyperplasia secondary to pituitary depending hyperadrenocorticism vs normal variant.
- Small hyperechoic adrenal nodules in the left cranial pole. 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. Lesions greater than 2 cm are generally primary adrenal neoplasia (benign or malignant) vs hyperplasia with lesions greater than 4 cm being more predictive of malignant neoplasia. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest hyperadrenocorticism) are most often incidental and should be monitored.
- Heterogeneous liver. Differentials for hepatic changes include both benign steroid (vacuolar) hepatopathy or extramedullary hematopoiesis as well as infiltrative round cell or metastatic neoplasia.

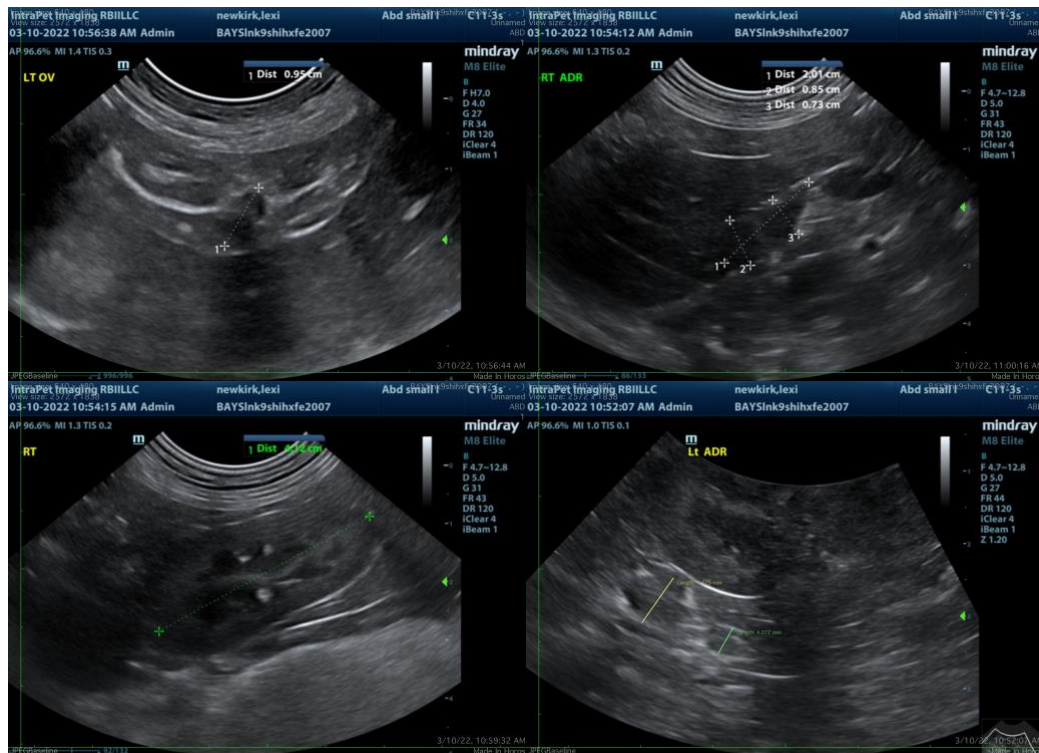
Secondary Findings

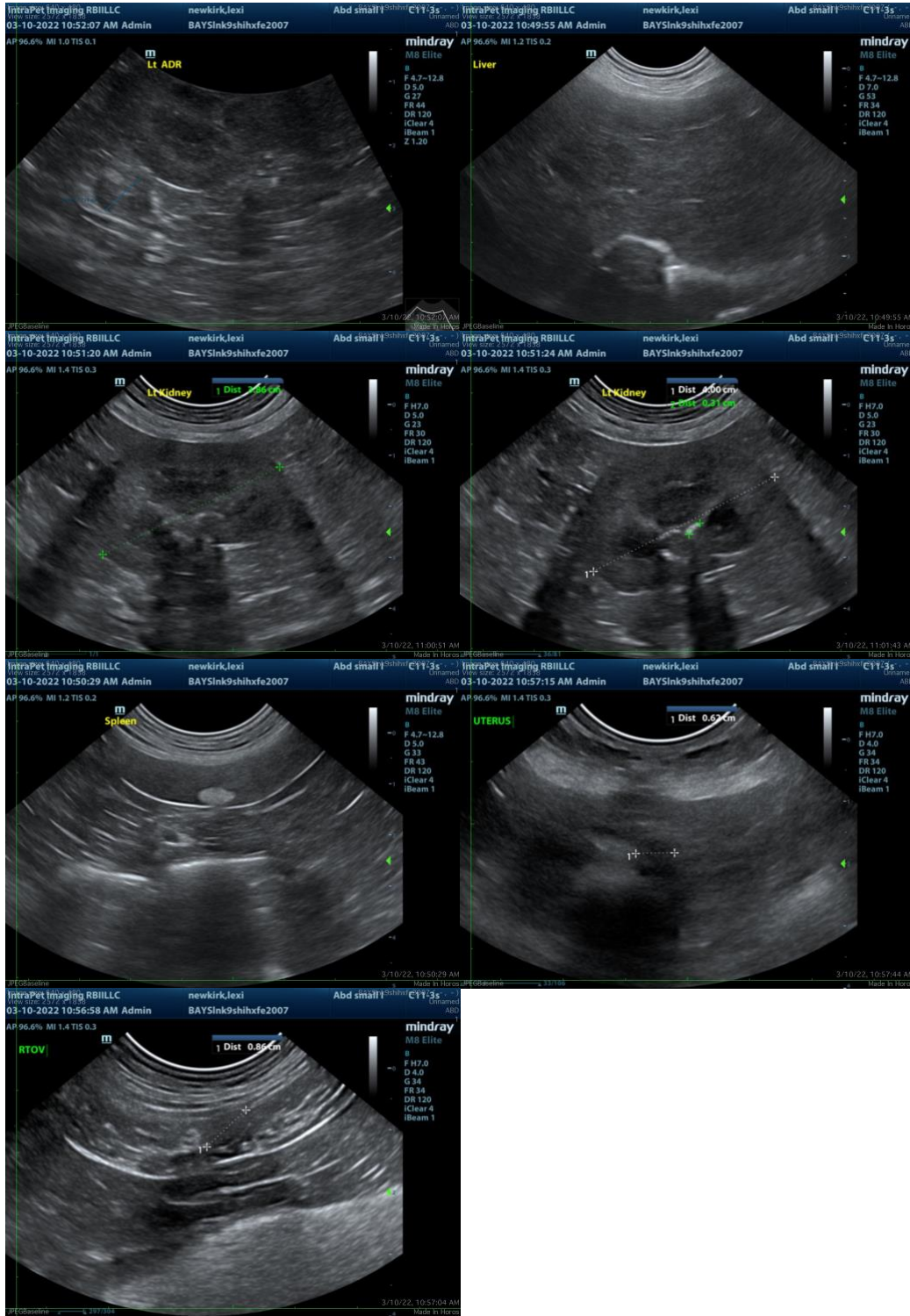
- Age-related kidneys bilaterally. This finding is expected/consistent with age-related mild degenerative disease and should be interpreted clinically in combination with laboratory changes. Non-obstructive nephrolithiasis in the left kidney.
- Hyperechoic splenic nodules are most consistent with benign myelolipomas. Other differentials such as fibrosis or calcification caused by old hematomas or infarcts, chronic inflammation, granulomatous disease or metastatic disease cannot be ruled out, but are less likely.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The suspected cause of this patients clinical signs is hyperadrenocorticism given the ultrasound appearance of the adrenal glands and the liver.

Recommendations include a low-dose dexamethasone suppression test for further evaluation of adrenal cortical function as well as a blood pressure, if not recently evaluated. If this patient does not have hyperadrenocorticism, a left adrenal pheochromocytoma could be considered and if this patient does not have hyperadrenocorticism, a fine needle aspirate of the liver is recommended if the patients coagulation status is appropriate.





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.

Beth Johnson, DVM DACVIM

Beth.Johnson@SonoPath.com