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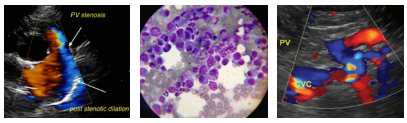

SonoPath
Clinical Sonography & Telecytology
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DATE

2/14/22

PATIENT

Cleo Windham

SPECIES

Canine

BREED

Boxer

SEX

Neutered Male

AGE

2012

WEIGHT

75.3 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Rachel Brilhart, RDMS

HOSPITAL NAME

Everhart Well Pet VH

REFERRING VET

Dr. Key

INVOICE

35635

PRESENTING CLINICAL SIGNS

Wellness labs 2/8 showed elevated liver values. Pet would not get up last night and this morning, seemed very out of it, p was laying on the floor with his eyes open but not responding to owner. Pet has been transitioning to new food d/t sensitive stomach. On physical today, Pet not as bright as normal but alert and responsive, normal CP's, PLRS. HR~85 bpm with normal rhythm. Neutrophilia on Labs today (26K) when had normal CBC on 8th. BP - 128/90; 142/80

Current Medications: prior to 2/8 carprofen 75mg q12-24 prn
Adequan 1.5mls q 2-4 weeks since summer, flexidin daily since summer, proviable, simparica trio since september

Lab Results: Today: Attached. Neutrophilia 26K, ALT182,
2/8 ALT 474, ALKP 148, chol 389 (non fast), PPSL - 387

Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: STAT requested.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

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.

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

Right kidney is normal is size (6.64 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

Left kidney is normal is size (8.26 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

Adrenal Glands

Left adrenal gland is normal in size (3.42 cm long x 0.74 cm at the cranial pole and 0.92 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The right adrenal gland is large in size (5.67 cm long x 2.26 cm at the cranial pole and and 2.26 cm at the caudal pole) and rounded in shape. Parenchyma is heterogeneous, characterized by hypoechoic nodular appearancein an overall hypoechoic adrenal gland. Corticomedullary distinction cannot be appreciated. There is no vascular invasion definitively appreciated in these images, but it cannot be definitively ruled out.

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). No focal nodules or masses are observed. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged with rounded margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. One of the representative nodules measured 2.5 cm and was hypoechoic, located in the cranial liver near the gallbladder. Visible vasculature appears normal.

GB contains a moderate amount of non-dependent, mildly aggregated/inspissated sludge. Hypo to anechoic cystic areas are noted between the gallbladder sludge and luminal wall. The wall is otherwise smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion.

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 mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of obstruction, foreign material or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. 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 evidence of peritoneal effusion. No appreciable lymphadenopathy in these images.

ULTRASONOGRAPHIC FINDINGS

- Heterogeneous liver - Differentials for hepatic changes include both benign steroid (vacuolar) hepatopathy or extramedullary hematopoiesis as well as infiltrative round cell or metastatic neoplasia.

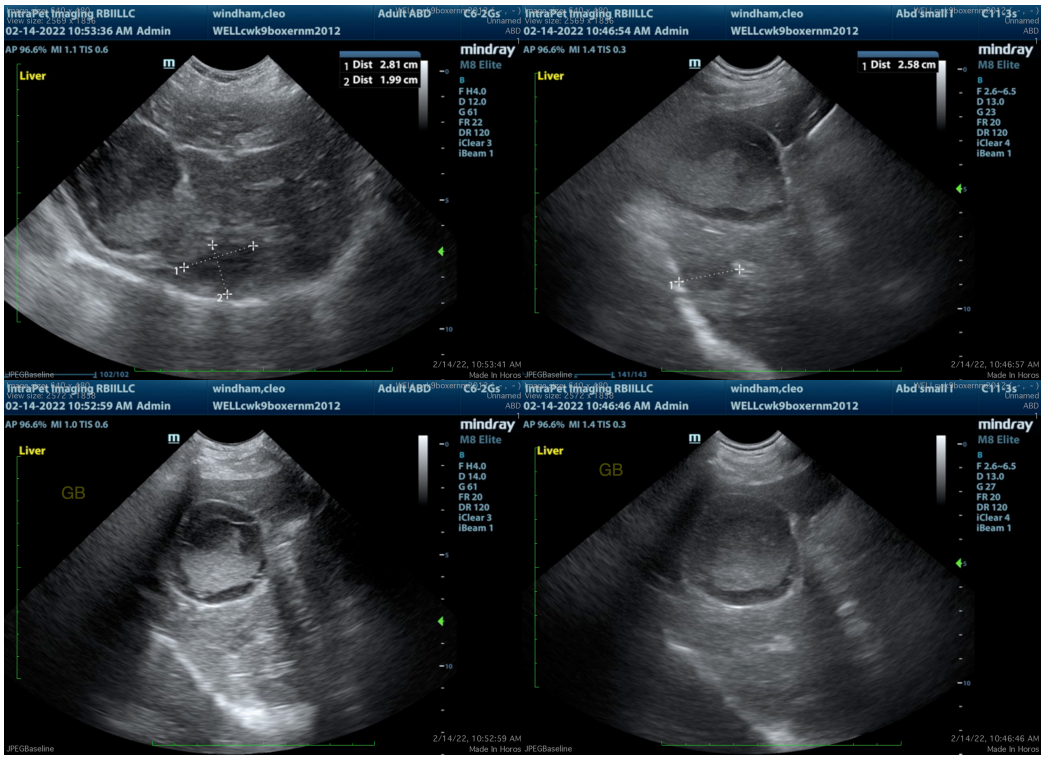
- Early mucocele - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. The non-dependent nature of this sludge combined with the cystic areas are suggestive, however, of possible emerging cystic mucosal hyperplasia or early gallbladder mucocele.

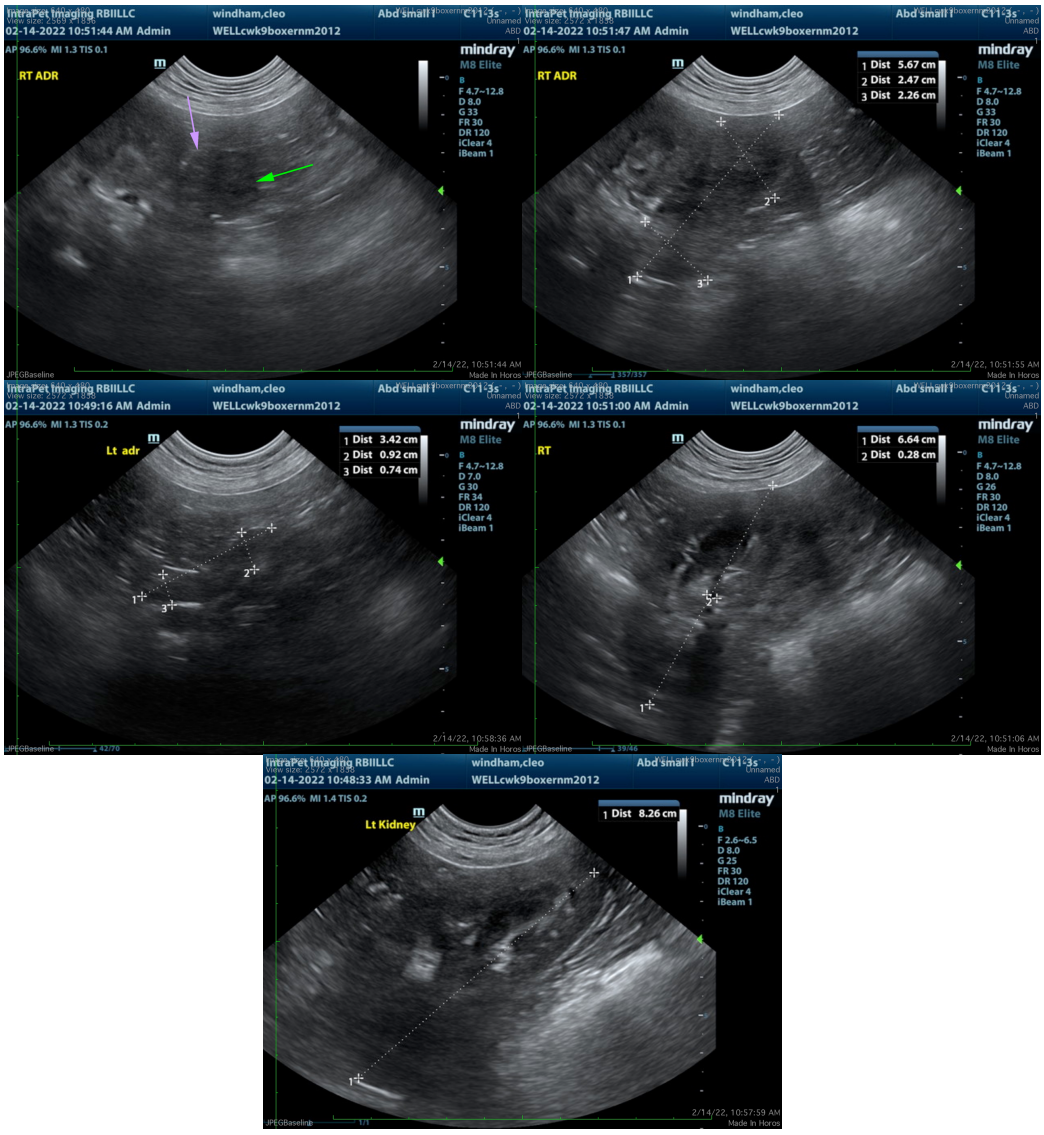
- Right adrenal gland mass – Differentials include primary adrenal cortical adenoma or adenocarcinoma, pheochromocytoma, or even adrenal hyperplasia secondary to pituitary dependent disease, given the concurrent plump appearance of the left adrenal gland. The mild loss of normal shape and parenchymal architecture and loss of corticomedullary distinction is concerning for primary adrenal mass, with both benign and malignant differentials possible. However, ultrasound alone unfortunately cannot distinguish.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Recommendations include hormone testing to futher investigate the adrenal gland changes and help differentiate pituitary dependent hyperadrenocorticism versus adrenal dependent hyperadrenocorticism versus pheochromocytoma versus other. A fine needle aspirate of the liver is also recommended if patient's coagulation status is appropriate. Given this patient's inappropriate behavior at home, differentials such as seizures or syncopal episodes, etc. need to be considered, and further evaluation of possible neurologic disease and/or cardiac disease may be indicated.

Pending those results, and the results of further hormone testing, an abdominal CT scan is recommended to further assess the adrenal gland, more definitively rule out vascular invasion +/- allow surgical planning for likely right adrenalectomy as well as cholecystectomy, given the concurrent gallbladder changes. If not already evaluated, 3-view thoracic radiographs to further assess cardiopulmonary status as well as to look for evidence of metastatic disease are recommended.





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
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