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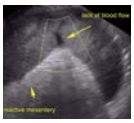
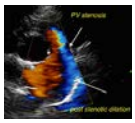
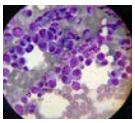
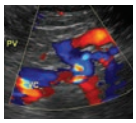

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IMAGING PERFORMED BY
dbimaginesound@gmail.com 917-647-4318

PATIENT

Chico Arambulo

SPECIES

Canine

BREED

Yorkshire Terrier

SEX

Neutered Male

AGE

14 Years

WEIGHT

13.9 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Denise Bruno, LVT, RDMS

HOSPITAL NAME

Forest Hills AC

REFERRING VET

Dr. Cortes

INVOICE

44648

DATE

1/31/23

PRESENTING CLINICAL SIGNS

Pendulant abdomen and diarrhea episodes.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is adequately distended with primarily anechoic contents as well as some suspended echogenic debris, and multiple too numerous to count tiny pinpoint cystoliths/mineral/sand debris along the dependent wall of the urinary bladder and throughout the urethral lumen, into the intraprostatic urethral lumen. They do not appear obstructive in nature.

The prostate is generally normal for a neutered dog with pinpoint mineralizations noted throughout the parenchyma.

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. The left kidney measured 4.66 cm. The right kidney measured 4.23 cm. Non-obstructive areas of mineralization/nephroliths are noted in both kidneys. Small bilateral cortical cysts are noted and several small bilateral chronic infarcts.

Adrenal Glands

Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. Some parenchymal heterogenicity is present without concerning capsular distortion. 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.

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 heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as moderate 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. Hyperechoic mucosal fogging or speckling is noted. Small intestinal motility appears adequate (1-3 contractions per min). The lumen is empty with no evidence of obstruction or foreign material.

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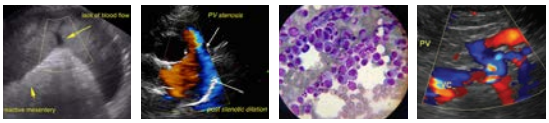

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The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The 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 free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

PRIMARY FINDINGS

- **Mucosal speckling –** Mucosal speckling is often present with inflammatory bowel disease (IBD). It is not specific for type or severity of disease. Mild speckling change can occur as a normal patient variant in the post-prandial state.
- **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.
- **Heterogenous Liver –** These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.
- **Moderate 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.

SECONDARY FINDINGS

- Incidental mild prostatic mineralization
- Too numerous to count tiny urinary bladder cystoliths as well as urethroliths and other mineral/sand debris
- Age related kidney changes with bilateral chronic infarcts, cortical cysts, and non-obstructive dystrophic mineralization

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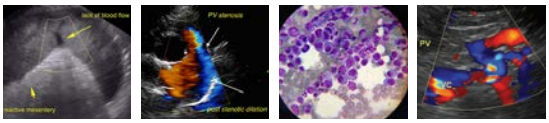

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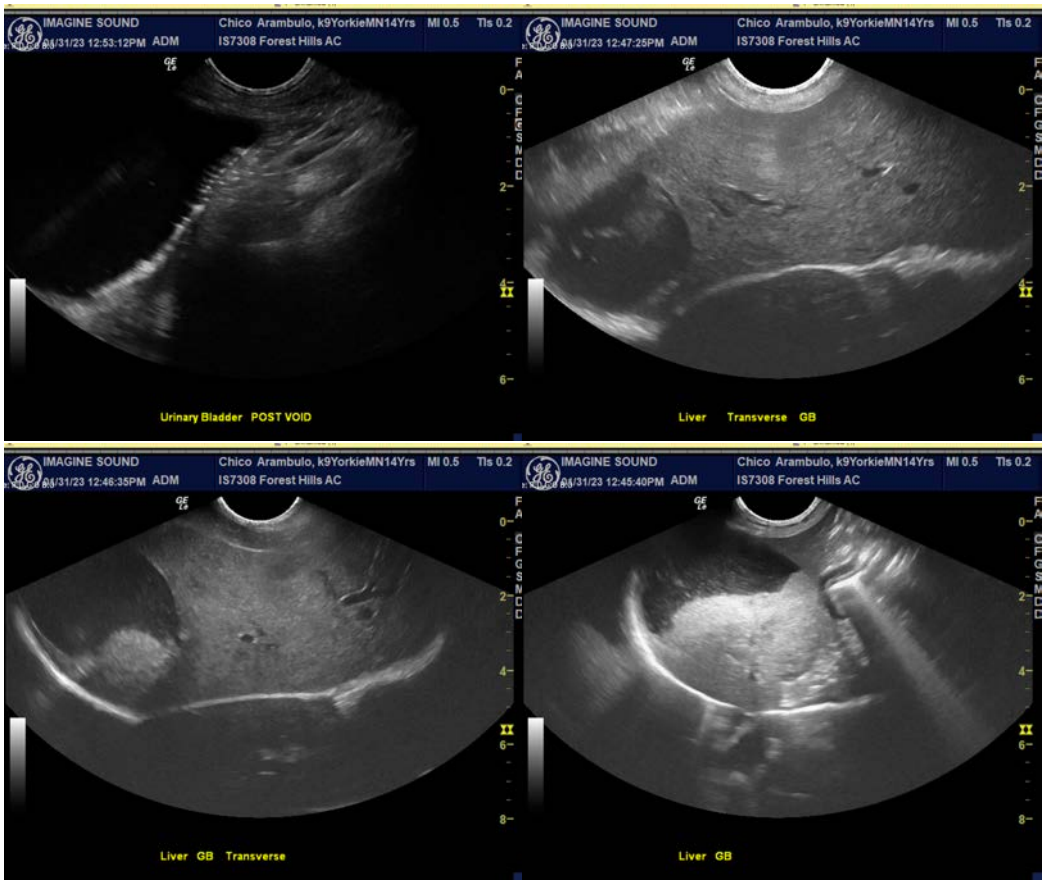
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

If not recently evaluated, a general metabolic health screen is recommended including CBC/Chem panel, electrolytes, a urinalysis and, if indicated based on urinalysis results, urine culture. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

Given this patient's reported diarrhea and the mucosal speckling, 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.

Pending results of labs and GI panel, etc., biopsies of the gastrointestinal tract may ultimately be required to definitively diagnose and therefore manage the patient's diarrhea. However, in the meantime, empirical therapies could include empirical deworming with a 5-day course of Panacur, a probiotic such as Visbiome or Proviable, and if tolerated, transition in diet based on trial-and-error response, beginning potentially with a hydrolyzed protein diet, or if there is evidence of protein losing enteropathy, a low-fat diet.

Additionally, the described adrenal gland, liver and gallbladder changes are all suggestive of hyperadrenocorticism. If clinical signs of hyperadrenocorticism, such as polyuria, polydipsia, polyphagia, panting, hair loss, hypertension, etc. are present, testing for hyperadrenocorticism with 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 clinicals signs are not present, monitoring is recommended with testing pursued when/if clinical signs develop. If not recently evaluated, blood pressure is recommended.



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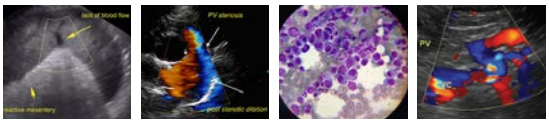

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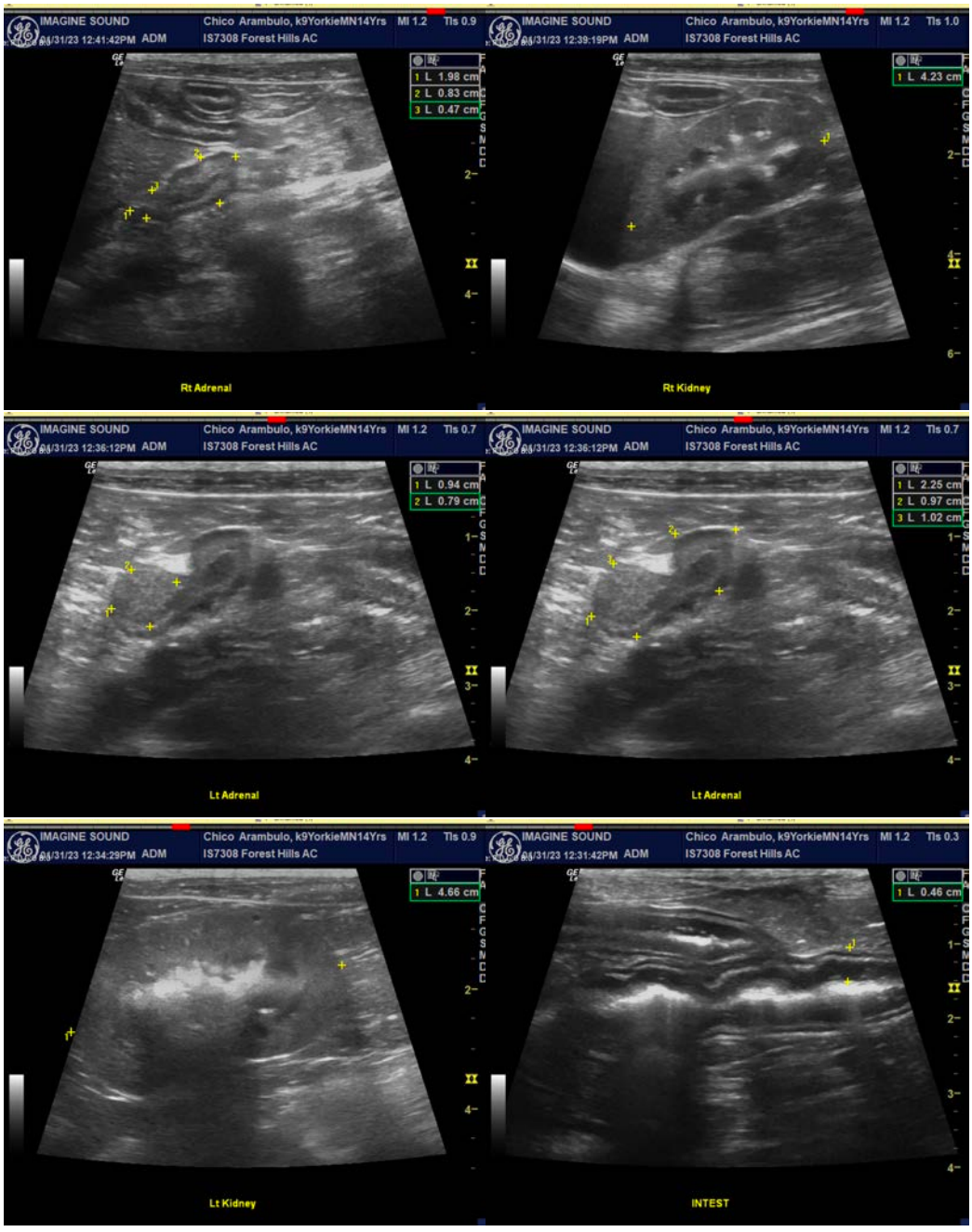

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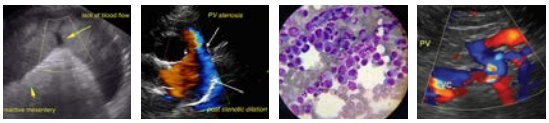

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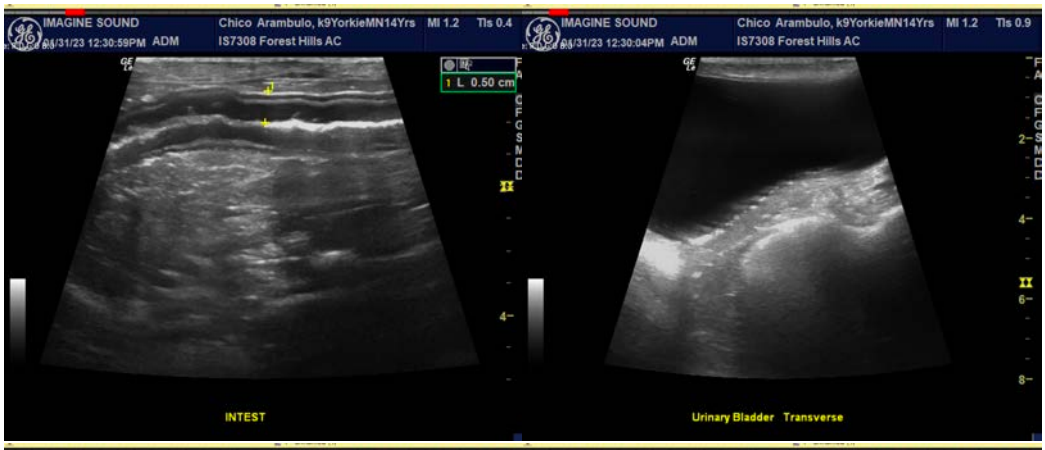

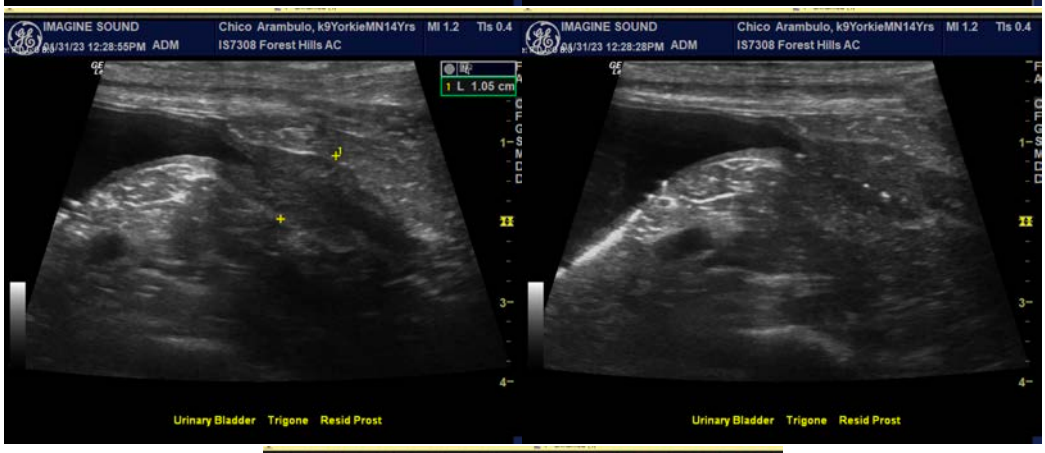

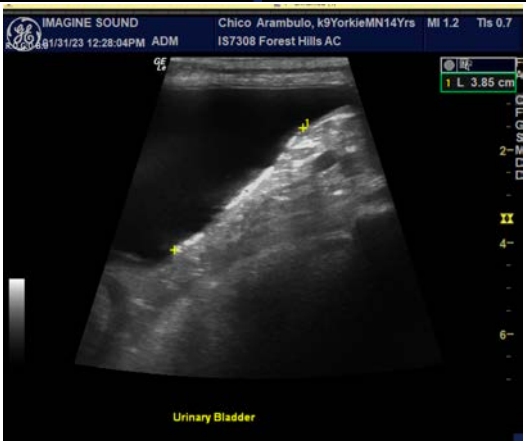

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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