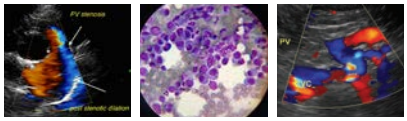
IMAGING PERFORMED BY

IntraPet.com



SonoPath

Clinical Sonography & Telecytology

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DATE

8/11/22

PATIENT

Maximus Redd

SPECIES

Canine

BREED

Yorkshire Terrier

SEX

Neutered Male

AGE

2/18/07

WEIGHT

3.81 kg

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Andi Parkinson RDMS

HOSPITAL NAME

Banfield Towson

REFERRING VET

Dr. Mike

INVOICE

40315

PRESENTING CLINICAL SIGNS

Mild tensing cranial abd today- had been very painful on last exam 2 d ago; decreased appetite/weight loss (0.8 # in 2 wks) past couple
Weeks. Chronic lameness left front, getting worse, chronic history of murmur (3/6 unchanged), rads front legs and chest not sent out for consult performed 8/9 - OA changes, dorsal elevation trachea and widening of cardiac waist, no obvious thoracic masses; hepatomegaly with rounding of liver margins visible in periphery

Current Medications: 8/9 - IVF, inj cerenia, inj butorphanol, sent home with entyce, cerenia oral. o declined ER transfer 8/9.
Lab Results: bw from 8/9: ap 280, alt 160, bun 111 (before IVF), cre 2.2 (similar to previous bw), strong + CPL.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Requested by DVM.

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.

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

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 or infarcts observed. The left kidney measures 3.3 cm. The right kidney measures 3.04 cm. Non-obstructive areas of mineralization/nephroliths are noted in both kidneys.

Adrenal Glands

The right adrenal gland is normal in size (1.63 cm long x 0.72 cm at the cranial pole and 0.95 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (1.57 cm long x 0.47 cm at the cranial pole and 0.53 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. 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

The liver contains two different discrete masses, one of which is caudal to the gallbladder and is approximately 3.0 cm in diameter with a homogeneous, slightly hypoechoic appearance. The second larger mass is 4-5 cm in diameter, located just cranial to the stomach and has a hyperechoic mixed, partially cystic appearance. The remainder of the liver parenchyma appears normal in echogenicity and echotexture. Visible vasculature and biliary tree appear normal without distention or congestion.

Gallbladder is mildly overdistended with 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 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. Hyperechoic mucosal fogging or speckling is noted. Small intestinal motility appears adequate (1-3 contractions per min). The lumen is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction or foreign material noted.

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

- **Two separate discrete liver masses** – Differentials include benign nodules/masses as can be seen with nodular hyperplasia, or adenoma/hepatoma versus infiltrative neoplastic/malignant disease, as can be seen with a well differentiated hepatocellular carcinoma, sarcoma, or even metastatic disease. The appearance of these masses trend towards the benign. However, malignant disease cannot be ruled out without tissue sampling.

- **Emerging 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.

- **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.

SECONDARY FINDINGS

- Age related kidney change with non-obstructive bilateral nephrolithiasis

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

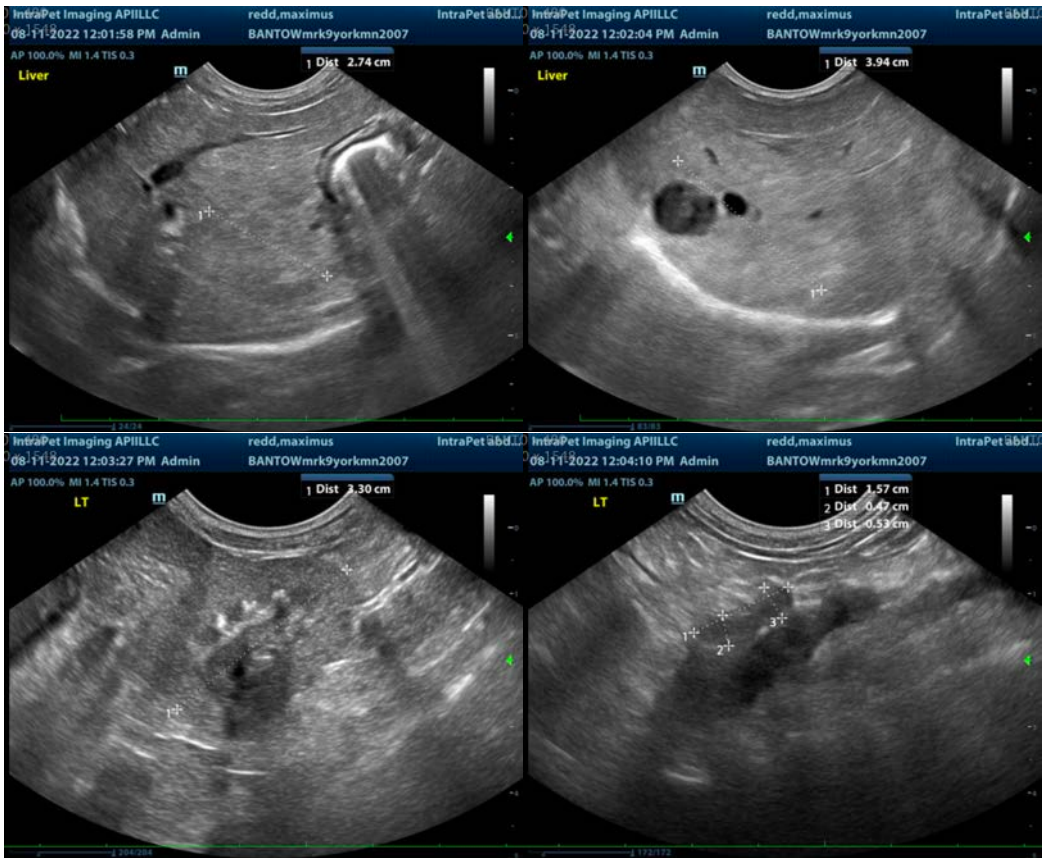
Based on these ultrasound images, the most likely contributing factor to cranial abdominal pain and decreased appetite is potentially the emerging gallbladder mucocele +/- the liver masses. However, the degree of change noted is not typically associated with such severe clinical signs and is not often associated with the laboratory change reported, in this case the severe azotemia. Therefore, other differentials for the

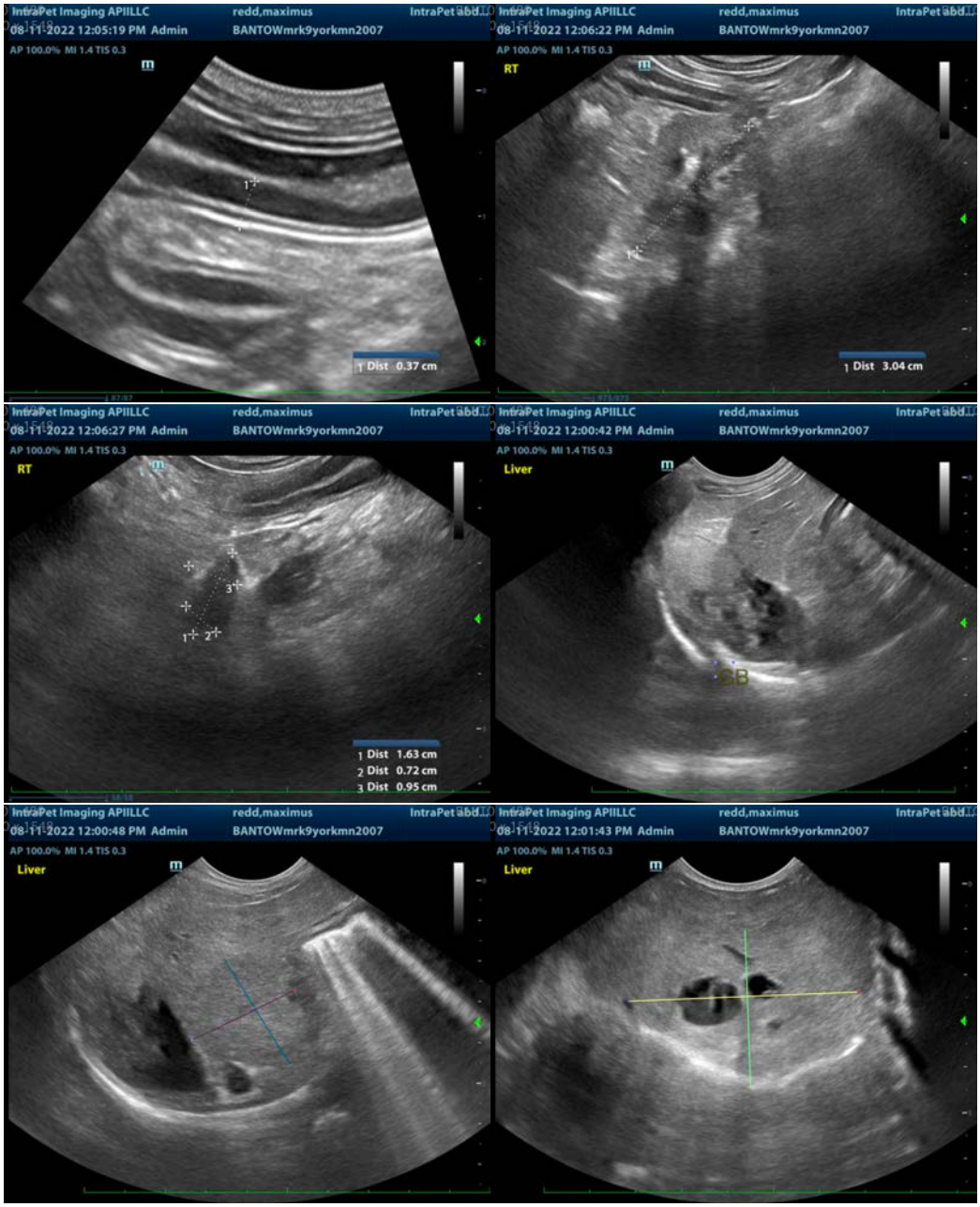
pain including cervical or spinal pain +/- the reported arthritis could be contributing, and the decreased appetite caused potentially by kidney and/or liver disease. Further diagnostic recommendations include a urinalysis, if not recently evaluated, to help further differentiate prerenal versus renal azotemia. Given the azotemia as well as the increased liver enzymes, testing for Leptospirosis is also warranted if not recently evaluated.

Given the discordantly high BUN relative to creatinine combined with the reported suspect cranial abdominal pain, a gastrointestinal bleed secondary to microulceration is also possible, in which case further diagnostics include a fecal exam as well as baseline cortisol level, and if the baseline cortisol is <2.0, a full follow up ACTH stimulation test.

While the contribution to clinical signs, etc. is unknown, the liver masses should be further investigated, and options include either a fine needle aspirate, if patient's coagulation status is appropriate, or alternatively, pending elected aggressiveness of management combined with patient stability, an exploratory laparotomy for gallbladder assessment/removal and liver mass biopsy/removal could be considered.

In the meantime, supportive/symptomatic medical management of the azotemia and decreased appetite, etc. is recommended with fluid therapy/diuresis, antiemetics, gastroprotectants, including Sucralfate, if possible, an appetite stimulant, pain management, and broad-spectrum antibiotics.





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
Beth.Johnson@sonopath.com