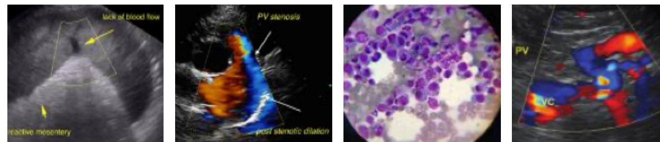
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



SonoPath.com™
1-800-838-4268 info@sonopath.com

PATIENT

Max Smith

SPECIES

Canine

BREED

Jack Russel Terrier

SEX

Neutered Male

AGE

12 years, 6 mos

WEIGHT

4.3 kg

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Patti Mayfield DVM

HOSPITAL NAME

Elevate Pet Wellness Center

REFERRING VET

Brooke Jacoby, DVM

INVOICE

13358

DATE

6.14.23

PRESENTING CLINICAL SIGNS

History:
6/13/23: Reason for visit and concerns: 3 days ago, he was really quiet and did not go to his food excitedly like he usually does. Eventually he finished his food, but reluctantly. - Did get a new bag of food and it started around that time. - Last night did not want to eat his food at all. Gave him Douglas's food last night and he was excited about that. - Vomited 2x overnight - undigested or partially digested food and some whitish mucus. - Urine was really concentrated yesterday. - More lethargic. - Stools are softish but grey/white in color. - Ate the FD option with water this morning again - unsure if excited. - No vomiting during the day, but has vomited during the night. Undigested food. - Yesterday did vomit a little in the afternoon. - Hasn't been anywhere new. - Has been eating frozen raw. - Constantly limping on his paw, never fully resolves. - He has not been on his thyroid meds for about a week - they ran out. Medications: - Levothyroxine 0.1 mg BID -Silver Sulfadiazine Cream 1% 25g Supplements: -RxBiotic 1 scoop BID (O ran out, need to refill) Diet: Stelly and chewy Lamb 7-8 nuggets per meal with a 1/4 scoop of Connectin, 1 pump of salmon/fish oil and 1oz of raw goats' milk, twice daily. Treats: blueberries almost daily (just 3-4) and then maybe a frozen peanut butter filled kong every couple of weeks. Green Juju and bone broth

Abnormal PE/Chem/CBC/UA Results: 6/13/23 PE: - General Appearance: Thin with unintentional weight loss, mentation - Integumentary: Normal haircoat texture. No evidence of ectoparasites, infection or erythema. - LF foot is still swollen with ulcerated kissing lesions between digit 4/5 (although improved from before) - Mild crusting of the peripheral pinnae - Musculoskeletal: Normal ROM, no evidence of lameness or asymmetry. No pain or sensitivity with palpation. - Mild carpal valgus of both forelimbs - Oral Cavity: Moderate dental tartar and gingivitis - grade 2-3 - Digestive: Normal GI sounds, no pain with palpation. No obvious fluid/mass, but possibly slightly thickened cranial abdomen

CBC: — HCT: 54% — WBC: 20,800/uL (4900-17,600) — PMN: 17,514/uL (2940-12,670) CHEM: — Na: 139 mmol/L (142-152) — Cl: 104 (108-119) — GLOB: 5.5 (2.4-4.0) — TP: 8.3 (5.5-7-5) — ALT: 1204 (18-121) — AST: 414 (16-55) — ALP: 1417 (5-160) — GGT: 69 (0-13) — TBILI: 1.4 (0-0.3) — CHOL: 429 (131-345) UA: Free catch, dark yellow, USG: 1.039, 3+ bilirubin Remainder normal Abdominal radiographs: Reportedly moderately large amount of ingesta with in the stomach, however, no obvious obstruction. Repeat, radiographs, following a fast, demonstrate further retention of ingesta. Remainder was unremarkable.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately 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.

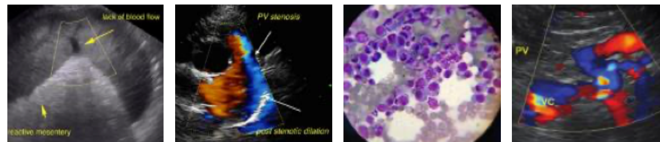
The prostate is unable to be well visualized in these images.

Left kidney is normal in size (3.82 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.

Right kidney is normal in size (4.30 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 (2.14 cm in length / 0.42 cm at cranial pole / 0.56 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.



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Right adrenal gland is normal in size (1.60 cm in length / 1.02 cm at cranial pole / 0.47 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

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 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 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. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine 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.

The visible colon is normal in wall thickness and layering. Contents are consistent with normal formed feces and gas.

Pancreas
The observed pancreas appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

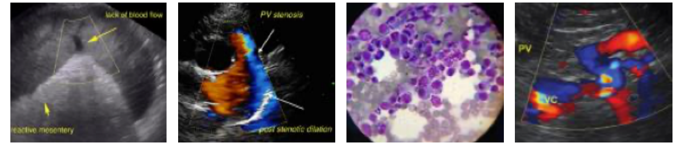
Free Abdomen
There is no evidence of peritoneal effusion. There is no apparent lymphadenopathy.

ULTRASONOGRAPHIC FINDINGS

Findings

- 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.

- Emerging gallbladder 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



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suggestive, however, of possible emerging cystic mucosal hyperplasia or early gallbladder mucocele.

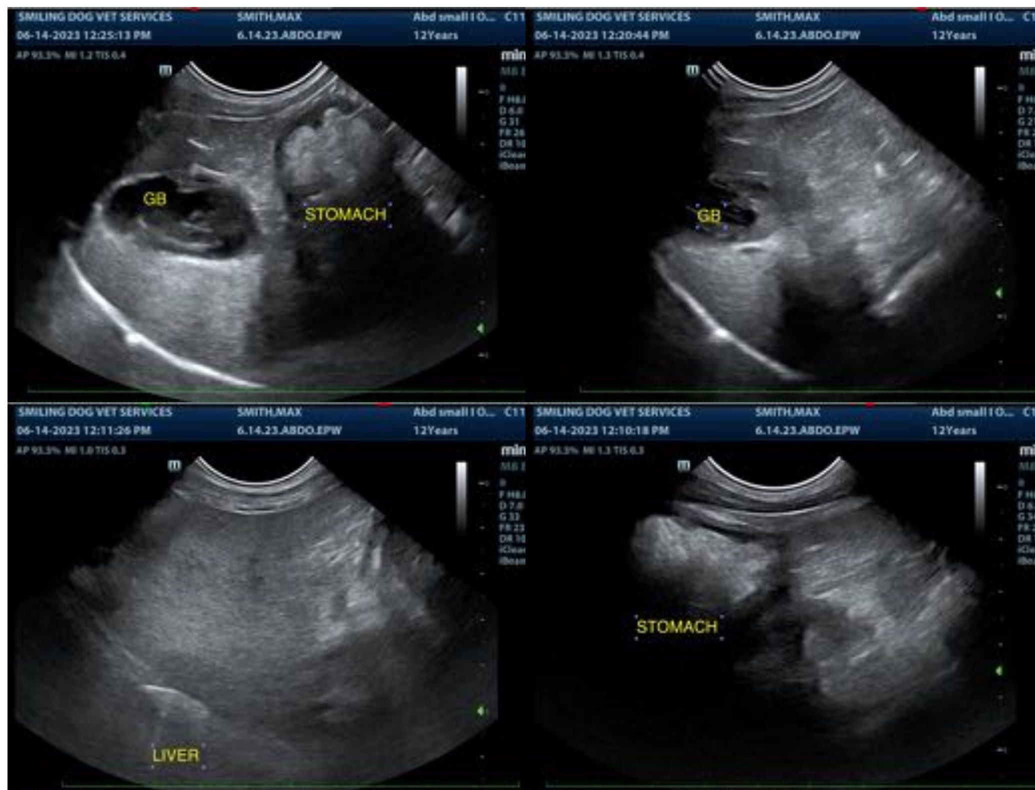
- The stomach and bowel appear most consistent with a post-prandial abdomen, especially knowing that this patient had to be fed during the ultrasound. Foreign material cannot be definitively ruled out, but there is no evidence of and obstruction, dilation, plication, etc., to suggest that.

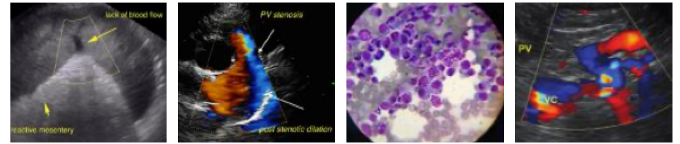
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Testing for Leptospirosis is recommended.

Given this patient's concurrent gastrointestinal signs, 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.

In the meantime, supportive/symptomatic medical management of a suspect hepatitis/cholangiohepatitis, potentially, an ascending infection brought on by gastrointestinal disease or even the historically raw diet, is recommended, in the form of antiemetics, gastric protectants, and appetite stimulants (if necessary), fluid therapy (if clinically warranted), pain management (if indicated), hepatic nutraceuticals including Ursodiol and broad-spectrum antibiotics. Ultimately, if liver enzymes don't improve, sampling of the liver will be recommended, beginning with a fine-needle aspirate (if patient's coagulation status is appropriate), and ultimately, proceeding to liver biopsy, if necessary, including copper level assessment.





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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.

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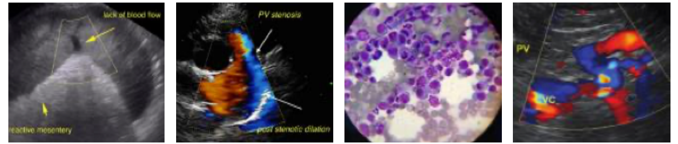

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