



PATIENT

Cleo O'Neill

SPECIES

Canine

BREED

Shih Tzu Mix

SEX

Intact Female

AGE

5 Years

WEIGHT

12.2

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Dr. Ferrer

HOSPITAL NAME

Paseos VC

REFERRING VET

Dr. Maria Martes

INVOICE

23002

DATE

6/20/23

PRESENTING CLINICAL SIGNS

History: Pt presented for an urgent abdominal ultrasound from EC for evaluation due to severely increased liver enzymes. History - Cleo is a 4 y/o F/S Mix breed dog that came to Emergency clinic on 6/18 pm with hx of vomiting, anorexia. She is normally treated in paseos veterinary center. diagnosed with hypothyroidism and on thyroid supplement (dose unknown). also diagnosed with diabetes mellitus but not on treatment for this? Current on vaccines and HW prevention Last night did cbc, chem, cPL and abdominal radiographs. Started on cerenia, metronidazole, unasyn, buprenorphine. 6/19 - No vomiting so far. QAR. MM pink. H/L - 4/6 heart murmur noted! Lungs auscult wnl. Abodmen tense on palpation, but no obvious pain. but has large bladder (needs to urinate). LN wnl. Temp normal. Recheck BG 303 9am fasted. No appetite. Problems 1. vomiting 2. anorexia 3. Hx untreated DM 4. hx hyperthyroidism 5. heart murmur 4/6. 6. mildly elevated liver enzymes. 7. abnormal cPL r/o pancreatitis, GB or hepatic dz - not sure if primary or secondary to uncontrolled diabetes? Need UA to see if has glucosuria, ketones, etc. Plan 1. Fluids - decrease maint dose 15 ml/hr LRS 2. monitor RR q 4 hrs. 3. continue cerenia 1mg/kg iv sid. 4. continue metronidazole 10mg/kg iv bid 5. continue unasyn 22mg/kg iv tid 6. add protonix 1mg/kg iv sid 7. recommend UA with c/s idexx - authorized - pending. 8. recommend formal abdominal US - can do in paseos 9. If not done recently, recheck TT4 - will do with regular vet. 10. monitor BG BID guarded px strongly recommend extend hospit. until tomorrow. recheck thyroid, consider recheck chem/cbc tomorrow pending response.

Abnormal PE/Chem/CBC/UA Results: Chem: GLU 279 mg/dL (74 - 143), BUN 5 mg/dL (7 - 27), GGT 57 U/L (0 - 11) TBIL 5.0 mg/dL (0.0 - 0.9), CHOL 369 mg/dL (110 - 320), AMYL 323 U/L (500 - 1500) ALT and ALP were so elevated that machine did not read them.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended. It has a normal uniform wall thickness. Contents include primarily anechoic fluid with occasional echogenic non-shadowing debris, most consistent with exfoliated cells, mucous and/or small blood clots. Both sterile inflammation as well as urinary tract infection can also present with echogenic debris. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Left kidney is normal in size (4.64 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.

Right kidney is normal in size (4.73 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 (0.44 cm at cranial pole and 0.43 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

Right adrenal gland is normal in size (0.47 cm at cranial pole and 0.43 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

Spleen



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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.

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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.

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Gallbladder is markedly overdistended with organized, aggregated and centralized non-gravity dependent sludge. Striations of sludge separated by anechoic areas are noted extending from the lumen to the luminal wall. The wall is markedly thick (0.8 cm thick), irregular and hyperechoic. The integrity of the gallbladder wall cannot be fully traced, which is very concerning for gallbladder rupture, especially given that where the wall is lost, there is free fluid and a marked amount of enhanced hyperechoic mesenteric fat.

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Gastrointestinal

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The visible stomach wall is normal in thickness and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

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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 empty with 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.

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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.

IMAGING PERFORMED BY

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Free Abdomen

There is free fluid and enhanced mesenteric fat surrounding the gallbladder. No lymphadenopathy is noted.

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ULTRASONOGRAPHIC FINDINGS

REFERRING VET

Dr. Maria Martes

- A severe mucocele with a strong suspicion of mucocele rupture.
- 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.

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- Urinary bladder debris

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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Following patient stabilization, once patient is stable to undergo surgery, an exploratory laparotomy for planned cholecystectomy and liver biopsy is recommended. Additionally, if not recently evaluated,



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urinalysis and, if indicated based on urinalysis results, urine culture is recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

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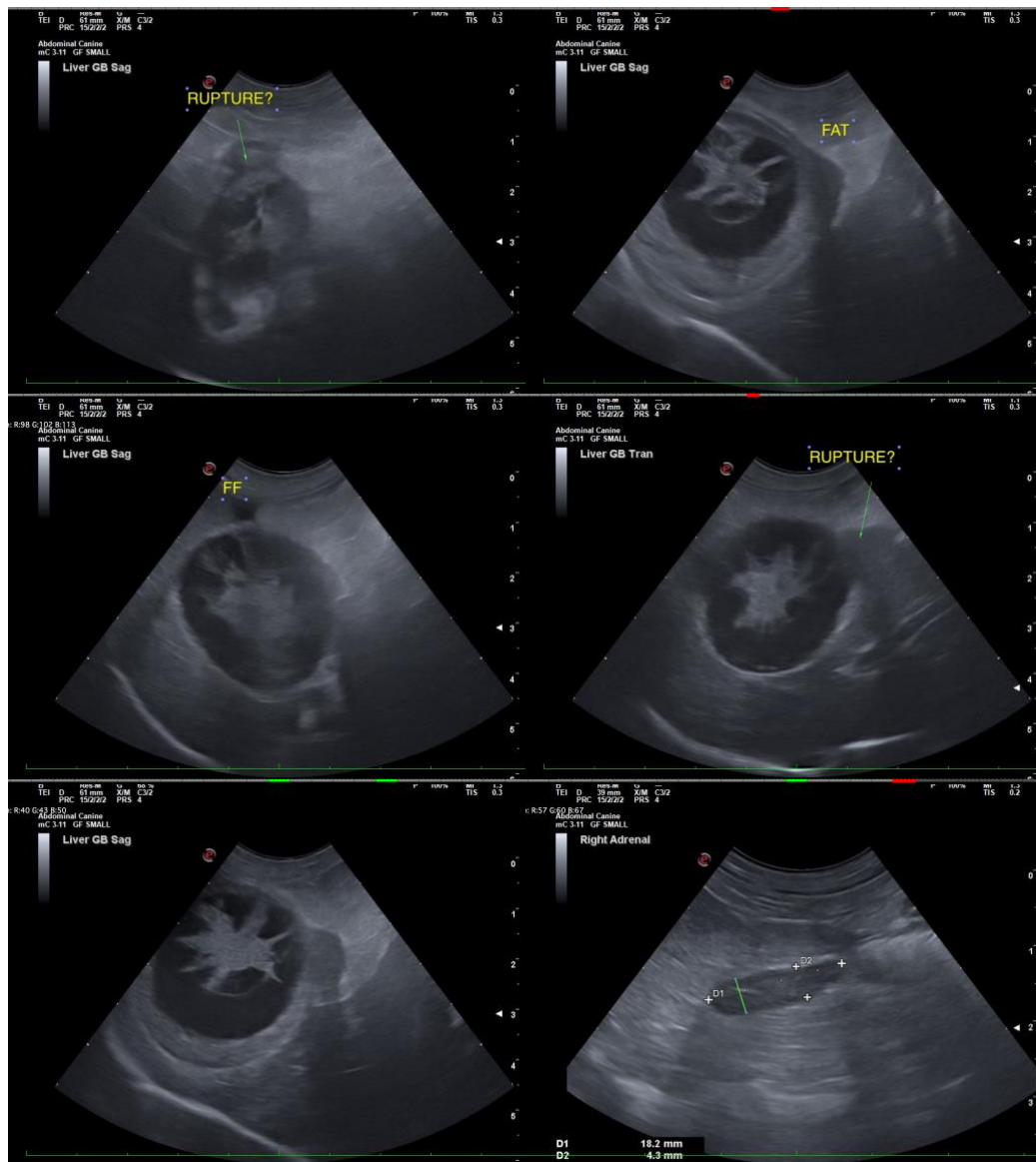
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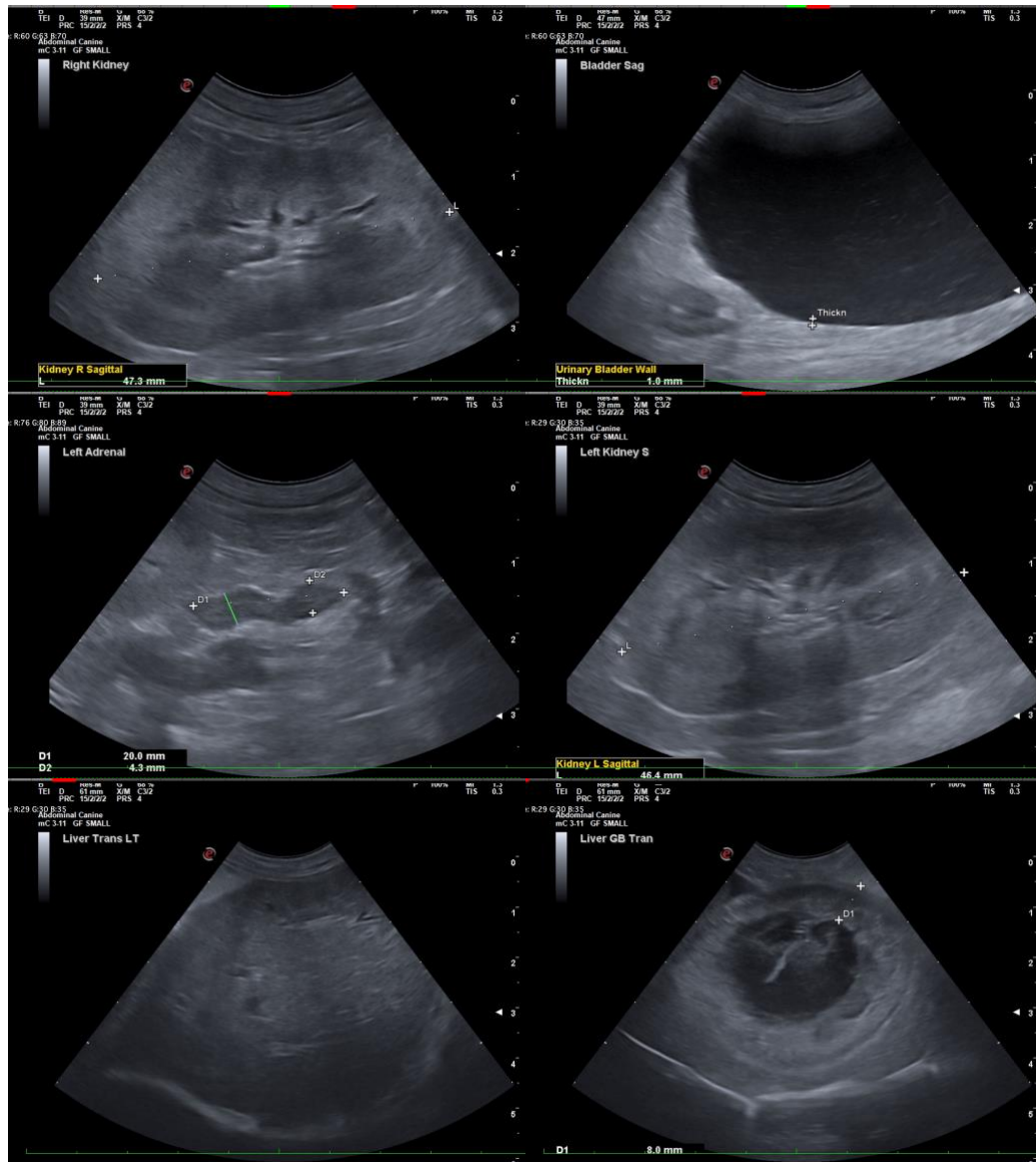
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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