**PATIENT PRESENTING CLINICAL SIGNS**

Bridgett Ferguson

History: Pet has not eaten in ~1 week.

**SPECIES**

Abnormal PE/Chem/CBC/UA Results: Elevated liver (ALT, ALP GGT) and kidney values (SDMA and BUN). High WBC. Elevated calcium and sodium. ALP 820. ALT 230. Albumen 2.1. Calcium 14.8. BUN 61. Creatinine 1.4. tBili 3.2 White count 36000 with a neutrophilia.

Canine

**BREED****ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

Yorkshire Terrier

**Urinary System****SEX**

The urinary bladder is mildly to moderately distended. The wall is normal in thickness with a smooth mucosal surface. Luminal contents are anechoic. The region of the trigone is normal. There is suspected mineralized sand +/- tiny calculi in the proximal urethra. The proximal urethra appears mildly dilated (0.35 cm in diameter).

Spayed Female

**AGE**

The left kidney is normal in size (3.15 cm in length) with a normal shape, smooth peripheral margins, and normal internal architecture. There is mild loss of corticomedullary distinction. Several hyperechoic shadowing diverticular foci are observed. Mild pyelectasia is present (0.24 cm in the transverse plane). A few small nonobstructive nephroliths are visualized. There is no evidence of infarcts or hydroureter.

9 years

**WEIGHT**

The right kidney is normal in size (3.38 cm in length) with a normal shape, smooth peripheral margins, and normal internal architecture. There is mild loss of corticomedullary distinction. Several hyperechoic shadowing diverticular foci are observed. Moderate pyelectasia is present (0.30 cm in the transverse plane). A few small nonobstructive nephroliths are visualized. There is no evidence of infarcts or hydroureter.

3.8 lbs

**INTERPRETED BY**

Andrea Nicastro,  
DVM, Diplomate  
ACVIM (Small Animal  
Internal Medicine)

**Adrenal Glands**

The left adrenal gland is normal in size (0.52 cm at cranial pole) (0.47 cm at caudal pole) with a normal shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

**IMAGING PERFORMED BY**

Amy Mayhew, LVT

The right adrenal gland is in normal size (0.41 cm at cranial pole) (0.46 cm at caudal pole) with a normal shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

**HOSPITAL NAME**

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**Spleen**

The spleen is prominent in size (0.77 cm in width at the level of the hilus) with slight scalloping of a portion of the peripheral contours. The parenchyma is of appropriate echogenicity and echotexture. No focal lesions are observed. A 0.82 x 0.55 cm hypoechoic-to-heterogenous nodule is observed at the cranial aspect. Splenic vasculature is normal with no evidence of thrombosis.

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**Liver**

The liver is subjectively enlarged with slightly swollen peripheral contours. The parenchyma is hypoechoic relative to the spleen and diffusely homogeneous in appearance. No distinct focal lesions are observed. Vascular and biliary tracts are of normal volume with no evidence of congestion.

**INVOICE**

14020

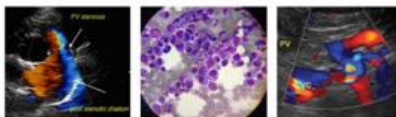
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The gall bladder lumen is moderately distended. The wall is thin and smooth. A small amount of suspended echogenic debris is observed within the lumen. The cystic and common bile ducts are normal/not seen.

**Gastrointestinal**

The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall is normal in

**PATIENT**

Bridgett Ferguson

thickness with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The ileocecolic junction and colonic wall are normal. The colonic lumen contains soft-appearing fecal material. There is no evidence of an obstructive pattern.

**SPECIES**

Canine

**Pancreas**

The pancreas is diffusely visible/prominent with minimal deviation from the normal peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat and mottled in appearance, with a few, small, ill-defined hypoechoic nodules/areas. The pancreatic duct is not overtly dilated.

**BREED**

Yorkshire Terrier

**Free Abdomen**

There is no obvious evidence of free fluid. Several enlarged rounded, hypo- to anechoic lymph nodes are observed in the caudal abdominal (the largest measuring 1.87 x 1.26 cm). Surrounding mesentery is hyperechoic. A few prominent periportal lymph nodes are also seen.

**SEX**

Spayed Female

**AGE**

9 years

**ULTRASONOGRAPHIC FINDINGS****Primary Findings****WEIGHT**

3.8 lbs

- The abdominal lymphadenopathy is concerning for either infiltrative neoplasia (i.e., lymphoma) or severe lymphadenitis (i.e., pyogranulomatous).
- Suspected proximal urethral sand +/- tiny uroliths.

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Internal Medicine)

**Secondary Findings**

- The splenic parenchymal changes could be consistent with a benign process (i.e., lymphoid hyperplasia, extramedullary hematopoiesis, antigenic stimulation, splenitis). However, emerging lymphoma cannot be excluded. The differentials for the splenic nodule are the same as for the diffuse splenic changes.
- An obvious cause for the elevated liver enzymes is not identified in the study. However, a microscopic hepatopathy (i.e., bacterial cholangiohepatitis, Leptospirosis, chronic active hepatitis, copper-associated hepatotoxicity, infiltrative neoplasia (less likely), vacuolar hepatopathy) is possible.
- The pancreatic changes are most consistent with age-related remodeling +/- fibrosis, with possible benign nodular hyperplasia.
- Bilateral chronic renal changes with nonobstructive nephrolithiasis.

**IMAGING PERFORMED BY**

Amy Mayhew, LVT

**HOSPITAL NAME**

SVS Imaging Michigan

**REFERRING VET**

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

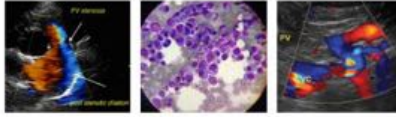
- Three-view thoracic radiographs are recommended to assess for lymphadenopathy in the chest.
- Fine-needle aspirates of the enlarged abdominal lymph nodes with submission for cytologic evaluation +/- aerobic and anaerobic bile cultures is also recommended (if clotting status is appropriate). Twenty-five gauge-needles should be used. Also consider splenic and liver aspirates.
- Regarding the hypercalcemia, consider measurement of PTH/PTHrP/ ionized calcium.

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**SPECIES**

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**BREED**

Yorkshire Terrier

**SEX**

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**WEIGHT**

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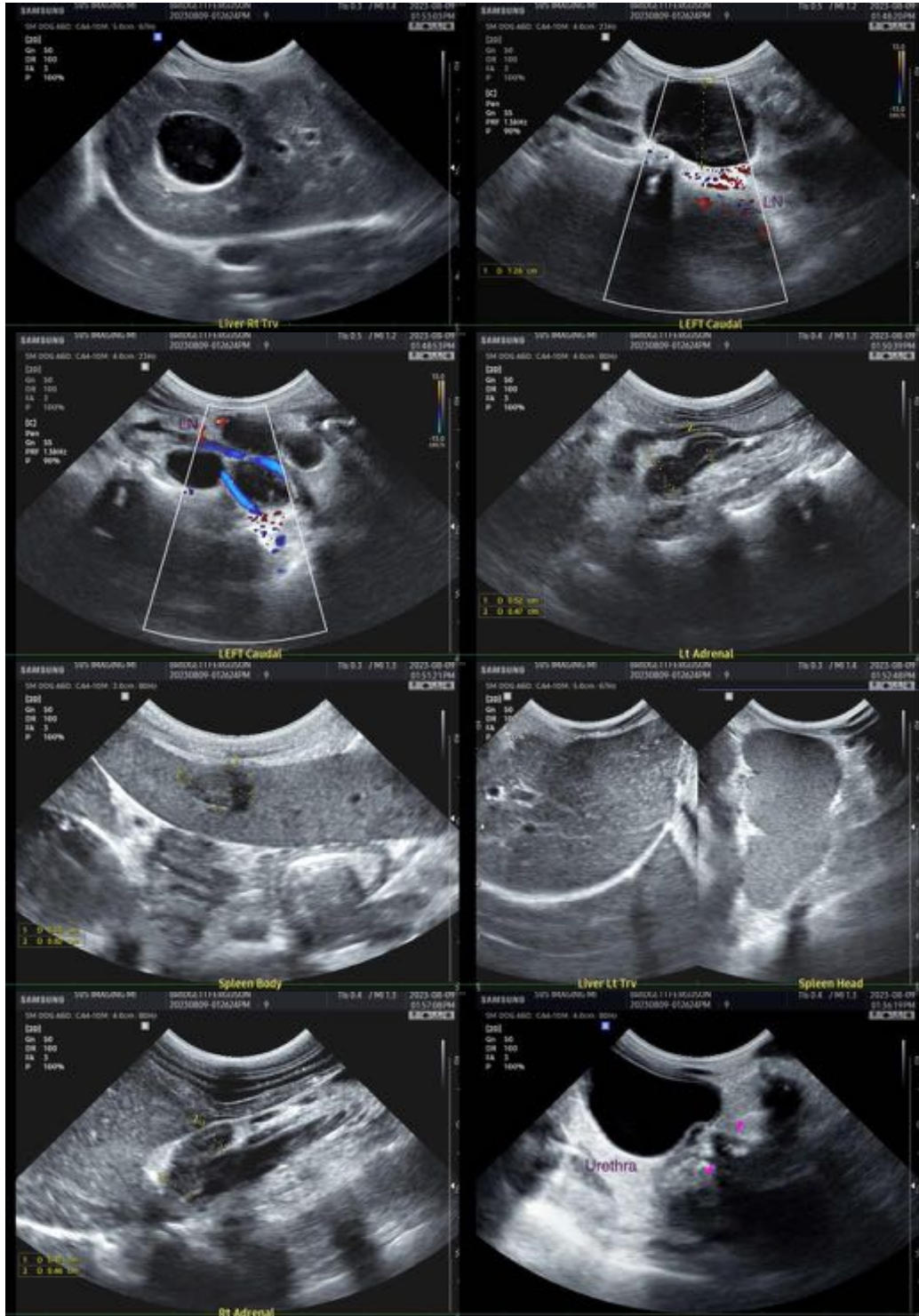
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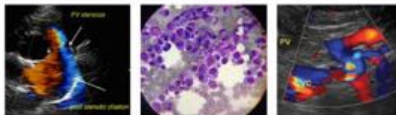
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**BREED**

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**SEX**

Spayed Female

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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.

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