SonoPath
Clinical Sonography & Telecytology
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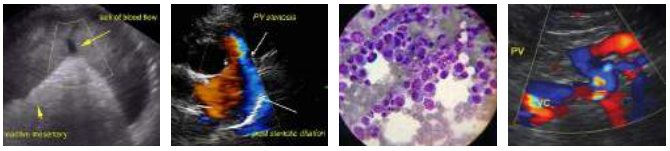

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Sunshine Roberts

SPECIES
Canine

BREED
Bichon Frise

SEX
Male Neutered

AGE
16 Years

WEIGHT
7.9 kgs.

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

IMAGING PERFORMED BY
Dr. Trudeau

HOSPITAL NAME
Petworks VH

REFERRING VET
Dr. Trudeau

INVOICE
11665kk

DATE
8/18/21

PRESENTING CLINICAL SIGNS

History: Increased liver enzymes; pu/pd with increased volume or urinations but not necessarily increased frequency; urine accidents; weight loss.

Abnormal PE/Chem/CBC/UA Results: CBC- WNL Chem - increased ALT 433 ALP U/L 301 U/L otherwise NSF U/A - USG 1.016; proteinuria; pH 6 otherwise NSF.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, and pelvic urethra are normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with mostly anechoic urine. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2 cm, are normal.

The prostate is normal in size (0.65 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

The left kidney is normal size (4.69 cm in length) with a slightly irregular shape. The cortex is thickened and hyperechoic to heterogeneous in appearance with poor corticomedullary distinction. Pinpoint hyperechoic foci are observed throughout the cortical parenchyma. Several varying-sized cysts are also seen. Hyperechoic, shadowing diverticular foci are present. There is moderate pyelectasia (0.52 cm in the transverse plane). There is no obvious evidence of infarction.

The right kidney is normal size (5.06 cm in length) with a slightly irregular shape. The cortex is thickened and hyperechoic to heterogeneous in appearance with poor corticomedullary distinction. Pinpoint hyperechoic foci are observed throughout the cortical parenchyma. Several varying-sized cysts are also seen. Hyperechoic, shadowing diverticular foci are present. At least one small nephrolith is visualized. There is mild pyelectasia (0.34 cm in the transverse plane). A small amount of echogenic debris is observed within the renal pelvis. There is no obvious evidence of infarction.

Adrenal Glands

The left adrenal gland is enlarged (1.25 cm at cranial pole) (0.89 cm at caudal pole) (2.31 cm in length) with an irregular shape. A 1.43 x 1.30 cm hyperechoic to heterogeneous nodule is observed at the cranial aspect. The lesion causes capsular expansion. Glandular echogenicity and detail at the caudal aspect are relatively normal. Surrounding vasculature appears normal.

The right adrenal gland is mildly enlarged (0.91 cm at cranial pole) (0.57 cm at caudal pole) (1.99 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

Spleen

Four still images of the spleen are available for interpretation. The spleen is subjectively normal in size (1.30 cm in width at the level of the hilus) with normal curvilinear peripheral contours. In the available images, the parenchyma appears diffusely mottled with at least one ill-defined, hyperechoic nodule at the medial aspect. Splenic vasculature appears normal with no evidence of thrombosis.

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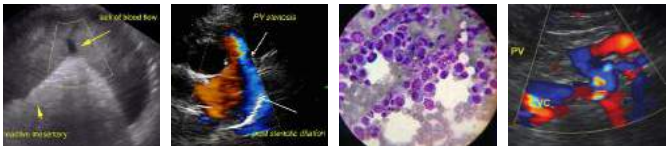

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Liver

The liver is subjectively prominent in size with slightly swollen peripheral contours. The parenchyma is isoechoic relative to the spleen and diffusely heterogeneous/mottled in appearance with several, ill-defined, hypoechoic nodules/areas, the largest measuring 2.00 cm approximately mid-liver. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion. The gall bladder is moderately distended. The wall is normal in thickness. Numerous polypoid-like lesions are observed along the circumference of the luminal surface. A small amount of echogenic debris is present. Luminal contents are anechoic. 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 minimally distended with ingesta. 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 thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. No obstructive disease is noted.

Pancreas

The left limb of the pancreas is visible with normal curvilinear peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat and slightly mottled in appearance. The left limb is prominent and hypoechoic. No focal lesions are observed. The pancreatic duct is not overtly dilated.

Free Abdomen

There is no obvious evidence of free fluid. A few prominent mid-abdominal lymph nodes are visualized.

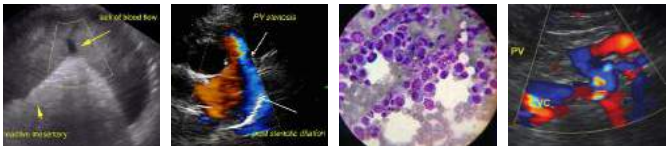
ULTRASONOGRAPHIC FINDINGS

Primary Findings:

- Diffuse, non-specific hepatopathy. Differentials include inflammatory/immune-mediated disease, hepatotoxicosis (i.e., copper), infiltrative neoplasia +/- concurrent age-related nodular hyperplasia, vacuolar hepatopathy, remodeling, and/or other hepatopathy.
- The splenic parenchyma, changes could be consistent with benign pathology (i.e., extramedullary hematopoiesis, lymphoid hyperplasia). Alternatively, infiltrative neoplasia (i.e., round cell tumor) may be present.

Secondary Findings:

- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- The abdominal lymphadenopathy most likely represents reactive change with low potential for emerging neoplasia.
- Bilateral adrenomegaly.
- Bilateral, age-related renal changes with dystrophic mineralization, pyelectasia, and right, non-obstructive nephroliths.



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

1. Cytologic evaluation of the liver should be considered in this patient if clotting status is appropriate. A fine needle aspirate using a 25-gauge needle is recommended. If cytologic evaluation is inconclusive, consider a surgical liver biopsy with aerobic and anaerobic bile cultures and acquisition of additional hepatic tissue samples for copper quantitation.
2. If a conservative approach is desired, consider empirical treatment for bacterial cholangiohepatitis (amoxicillin-clavulanic acid, Denamarin Advanced). If no improvement in the liver values is seen within 7-10 days of initiating therapy, antibiotics should be discontinued, and hepatic tissue sampling reconsidered. If liver values improve, continue therapy for at least 4-6 weeks and 1 week beyond normalization of the liver values.
3. Consider leptospirosis testing (i.e., blood and urine PCR, serology, particularly if the disease is endemic in the patient's geographic region.
4. Given the proteinuria, a UPC should be considered.
5. Cushing's testing may be warranted in the future, if clinical signs are present and if the hepatopathy is diagnosed/stabilized.
6. Given the patient's age, three-view thoracic radiographs are recommended to assess cardiopulmonary status.

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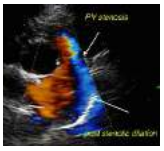
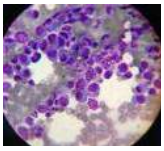
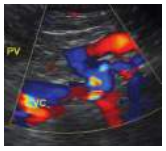

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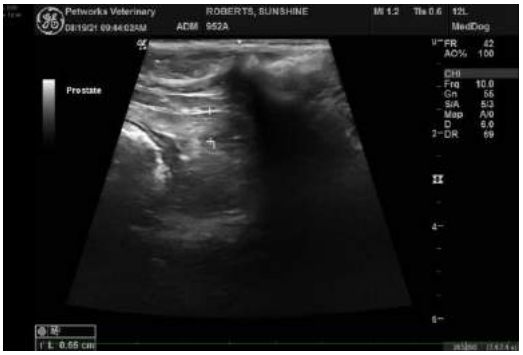

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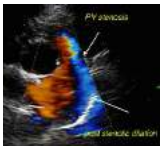
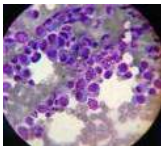
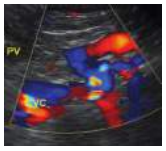

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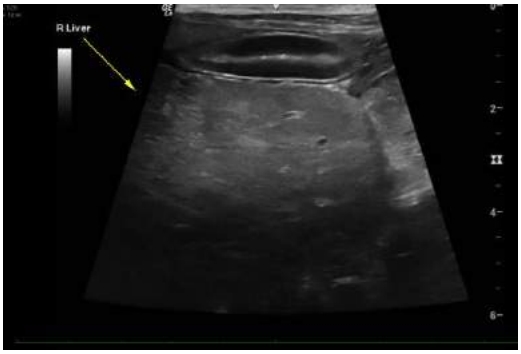

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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