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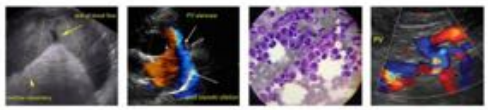

SonoPath
Clinical Sonography & Telecytology
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PATIENT

Henry Brown

SPECIES

Canine

BREED

Shih Tzu Mix

SEX

Neutered Male

AGE

12.5 years

WEIGHT

23.4 lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

Pamela Harrigan, RDCS

HOSPITAL NAME

Norfolk County Vet Svc

REFERRING VET

Emily McCabe, DVM

INVOICE

12700

PRESENTING CLINICAL SIGNS

History: Bicavity exams. 1) Recheck echo-history of chronic valvular disease-Stage B2. 2) Abnormal BW identified when presenting for PU/PD and diarrhea. Current meds: 1) Metronidazole 125mg BID, 2) Aluminum hydroxide 175mg BID, 3) Denamarin med SID, 4) Vetmedin 3.75mg BID. -Pertinent previous echo findings 99/1/22 MML): LA 2.36 cm, LA:Ao 1.5, LV 2.9 cm, mild-moderate LAE, moderate MR, moderate TR (3.6 m/s; 54 mmHg), moderate pulmonary hypertension.

Abnormal PE/Chem/CBC/UA Results: ALT 335, BUN 114, creat 3.5, SDMA 18.9, phos 9.3, MG 2.7, chol 353, amylase 1255, precision PSL 376, plt 528, key screen fecal all undetected.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended. The wall is normal in thickness. The mucosal surface in the region of the apex is slightly irregular. A small amount of gravity-dependent mineralized sand +/- tiny calculi is observed within the lumen. The region of the trigone is normal.

The prostate is normal in size with a normal shape and smooth peripheral contours. Parenchyma is mildly heterogenous in appearance. Mineralized debris +/- tiny calculi are observed within the prostatic urethra. The prostatic urethra is not overtly dilated.

The prostate is normal in size (0.89 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

The left kidney is normal in size (5.13 cm in length) with a slightly irregular shape. The cortex is diffusely thickened and hyperechoic relative to the spleen, and slightly heterogenous in appearance. Numerous varying-sized cortical cysts are seen. There is a poor corticomedullary distinction. A few nonobstructive focus of mineralization are present. Trace pyelectasia is observed. There is no evidence of infarcts or hydroureter.

The right kidney is normal in size (5.90 cm in length) with a slightly irregular shape. The cortex is diffusely thickened and hyperechoic relative to the spleen, and slightly heterogenous in appearance. Numerous varying-sized cortical cysts are seen. There is a poor corticomedullary distinction. A few nonobstructive focus of mineralization are present. Mild pyelectasia is observed (0.19 cm in the transverse plane). There is no evidence of infarcts or hydroureter.

Adrenal Glands

The left adrenal gland is mildly enlarged (0.47 cm at cranial pole) (0.63 cm at caudal pole) with a slightly irregular 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.

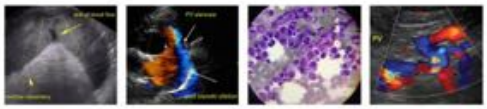
The right adrenal gland is in normal size (0.48 cm at cranial pole) (0.50 cm at caudal pole) with a normal shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

Spleen

The spleen is normal in size (1.08 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

Liver

The liver is subjectively enlarged with swollen peripheral contours. The parenchyma is isoechoic relative to the spleen and subtly heterogenous in appearance. A 0.83 cm irregular cyst is observed



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deep on the left side. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion.

The gall bladder lumen is distended. The wall is normal in thickness. A large amount of aggregated, echogenic suspended sludge in partially stellate pattern 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 thickness with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

Pancreas

The right limb is enlarged with minimal deviation from the normal peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat and heterogenous in appearance, with several small, ill-defined hypoechoic nodules. The pancreatic duct is not overtly dilated.

Free Abdomen

There is no obvious evidence of free fluid. The abdominal lymph nodes are normal/not visible.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

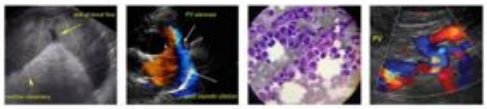
- The bilateral renal changes are most consistent with chronic interstitial nephrosis/nephritis with nonobstructive nephrocalcinosis, mild pyelectasia and cortical cysts.
- Urinary bladder sand +/- tiny calculi within the bladder lumen and prostatic urethra
- The hepatic parenchymal changes could be consistent with inflammatory disease (i.e., chronic hepatitis, bacterial cholangiohepatitis), vacuolar hepatopathy, regenerative nodular hyperplasia, hepatotoxicosis (i.e., copper), Leptospirosis, other hepatopathy or some combination thereof. The hepatic cyst likely represents a benign lesion with a low possibility of an emerging tumor.
- The gall bladder changes are consistent with an emerging mucocele.

Secondary Findings

- Mild left adrenomegaly
- Age-related pancreatic remodeling +/- fibrosis. Chronic pancreatitis is possible. The hypoechoic nodules likely represent benign nodular hyperplasia.
- The prostatic parenchymal changes are most consistent with age-related remodeling with a lower possibility of more insidious pathology.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Regarding the azotemia, consider the following:



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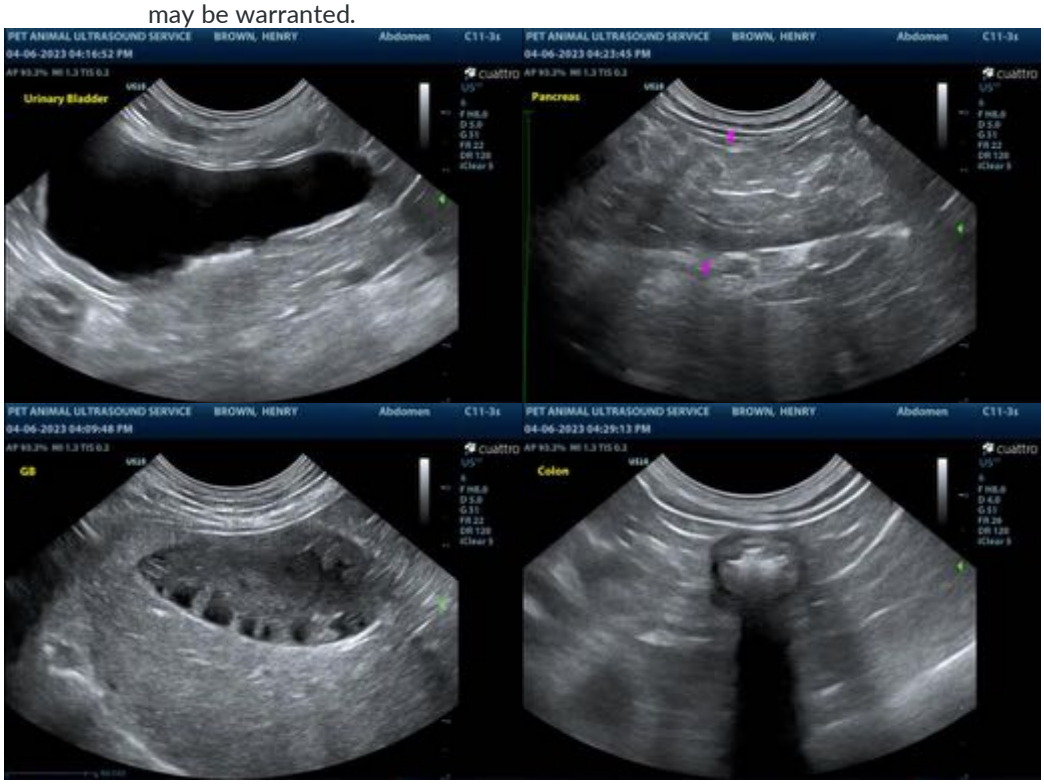
1. Urine culture and sensitivity
2. UPC (if proteinuria is present in the absence of infection)
3. Baseline blood pressure measurement
4. IV fluid diuresis and symptomatic care
5. Serial monitoring of the patient's renal values to assess for progression
6. Consider three-view thoracic radiographs to assess cardiopulmonary status, particularly if IV fluids are to be initiated.

- Given the gall bladder changes, Ursodeoxycholic acid (Ursodiol) is recommended. Serial sonographic monitoring (e.g., every 6-8 weeks) of the gall bladder is recommended to assess for progression to a fully formed mucocele. A cholecystectomy can also be considered if the patient's renal status stabilizes.

- Cytologic evaluation of the liver should be considered in this patient if clotting status is appropriate. If the patient's renal status can be stabilized, consider 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. If a more conservative approach is desired, consider empirical treatment for cholangiohepatitis with amoxicillin-clavulanic acid along with hepatic antioxidants. If liver values do not begin to improve within 7-10 days of initiating therapy, antibiotics should be discontinued and hepatic tissue sampling reconsidered. If values do improve, a 4–6-week course of treatment is recommended.

- Regarding the diarrhea, consider the following:

1. Prophylactic deworming with Fenbendazole
2. Initiation of a probiotic with a high colony count +/- a fiber supplement
3. GI panel including serum cobalamin and folate, TLI and PLI
4. Depending on the results of the above diagnostics, a more comprehensive GI work-up may be warranted.



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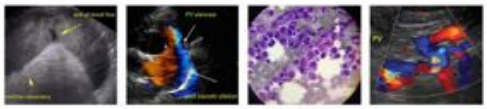

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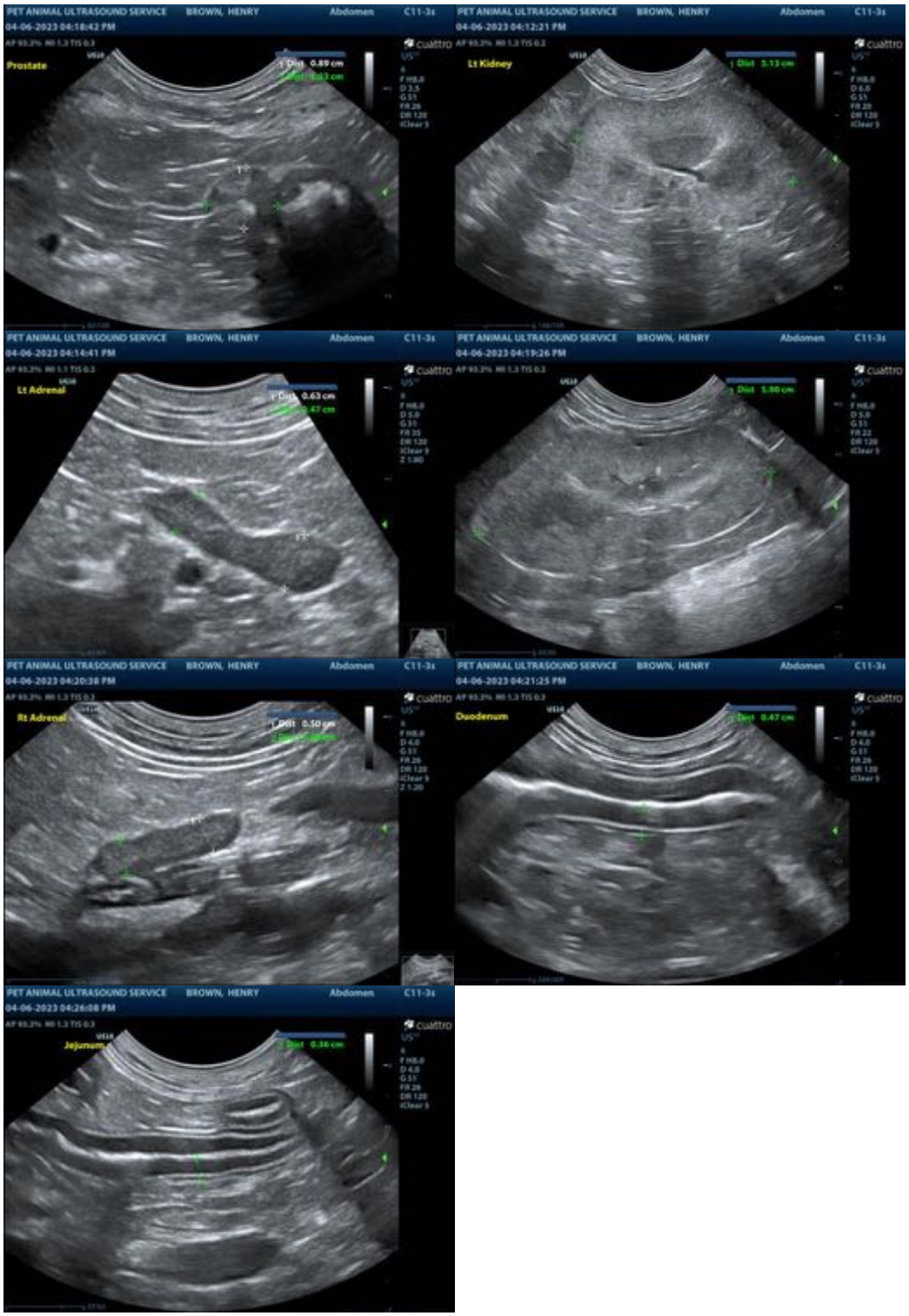
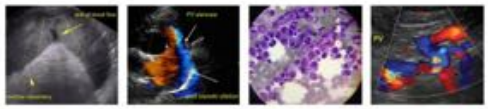


The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I



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can be of any further assistance, please contact me.
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