



## PATIENT PRESENTING CLINICAL SIGNS

- Porter Heaton
- Diabetic receiving 14 units Novolin q12h, 30 minutes after eating
  - Current medications: Galliprant, Proin
  - No insulin given today due to anorexia this am
- SPECIES**
- Canine
- Intermittent appetite issues for approximately one week
  - Ate full meal yesterday morning, then refused food last night and this morning
  - Soft stools coated in blood, with fresh blood drops noted this morning
  - Brief episode of hiccup-like spasms 2 days ago, lasting 10 minutes, resolved spontaneously
- BREED**
- Sm Mixed Breed
- No vomiting, coughing, or sneezing
  - History of dislocated left hip
  - History of elevated liver enzymes

## SEX

Neutered Male

## AGE

17

Abnormal PE/Chem/CBC/UA Results: Chemistry panel: BUN 91.1 (H) [9-29], phosphorus 7.9 (H) [1.9-5], glucose 422 (H), cholesterol too high to read, ALT 782 (H) [0-120], ALP too high to read, GGT 20 (H) [0-14] - Blood gas: Bicarbonate 12.2 (L) [16-28], pH 7.138 (L) [7.36-7.46], ionized calcium 1.44 (H) [1.13-1.42], lactate 3.93 (H) [0.6-3], creatinine 1.96 (H) [0.4-1.5], glucose 414, hematocrit 38% - CBC: RBC 4.82 (L) [5.82-8.9], hemoglobin 12.8 (L) [13.2-22], hematocrit 35.7 (L) [36.9-60] - Pancreatic lipase: Normal - Urinalysis dipstick: Glucose 250+, protein 30+, pH 6 - Urine ketones: Negative

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### WEIGHT

21.58 lbs

### Urinary System

The urinary bladder wall is normal in thickness. The mucosal surface is smooth. The bladder is moderately distended. Luminal contents are anechoic. No cystic calculi are observed. The region of the trigone and the proximal urethra, visible to a depth of 3.0 cm, are normal.

### INTERPRETED BY

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

The prostate is normal in size (0.94 cm in width) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild loss of corticomedullary distinction. Moderate pyelectasia is present (0.38 cm in the longitudinal plane). There is no evidence of nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

### IMAGING PERFORMED BY

Dr. Ugorji

The left kidney is normal in size (4.19 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild loss of corticomedullary distinction. Moderate pyelectasia is present (0.33 cm in the longitudinal plane). There is no evidence of nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

### HOSPITAL NAME

Craig Road AH

The right kidney is normal in size (4.19 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

### REFERRING VET

Dr. Cooper

### Adrenal Glands

The left adrenal gland is normal in size (0.56 cm at cranial pole) (0.56 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.

### INVOICE

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The right adrenal gland is normal in size (0.76 cm at cranial pole) (0.64 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.

### DATE

4-26-26



## PATIENT

### *Spleen*

Porter Heaton

The spleen is normal in size (1.22 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. Pinpoint hyperechoic foci are observed throughout the organ. Splenic vasculature is normal.

## SPECIES

### *Liver*

Canine

The liver is subjectively enlarged with slightly swollen peripheral contours. The parenchyma is isoechoic 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.

## BREED

Sm Mixed Breed

The gallbladder lumen is moderately distended. The wall is thin and smooth. A few small, polypoid-like lesions are arising from the mucosal surface. A moderate amount of aggregated, hyperechoic, partially dependent, debris/sludge is observed within the lumen. The cystic and common bile ducts are normal/not seen.

## SEX

Neutered Male

### *Gastrointestinal*

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.

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### *Pancreas*

The right limb of the pancreas is normal-in-size with normal curvilinear peripheral contours. The parenchyma is largely hyperechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic inflammation or effusion.

## INTERPRETED BY

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

### *Lymph Nodes*

The abdominal lymph nodes are normal/not visible.

### *Free Abdomen*

There is no obvious evidence of free fluid.

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## ULTRASONOGRAPHIC FINDINGS

### *Primary Findings*

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- Bilateral nonspecific age-related renal changes with bilateral pyelectasia. The pyelectasia may be secondary to pyelonephritis, parenchymal remodeling, PU/PD (if applicable), fluid therapy (if applicable), or some combination thereof.

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- 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)) is suspected.

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- The gallbladder changes could be consistent with cholestasis, fasting, or an emerging mucocele.

### *Secondary Findings*

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- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.



## PATIENT

- Splenic dystrophic mineralization. This is likely a benign incidental finding. It is commonly seen with endocrinopathies.

Porter Heaton

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

## SPECIES

- Given the azotemia, consider the following:

Canine

1. Urinalysis with culture and sensitivity
2. UPC if proteinuria is present in the absence of infection
3. Baseline blood pressure measurement
4. Leptospirosis testing (i.e., blood and urine PCR, serology), particularly if the clinical suspicion for disease is high
5. Fluid therapy as needed
6. Serial monitoring of the patient's renal values to assess progression of the azotemia

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- Regarding the elevated liver values, consider the following:

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1. Pre- and postprandial serum bile acids
2. Leptospirosis testing (as stated above)
3. +/- hepatic tissue sampling (i.e., aspirates or biopsies) assuming normal clotting status. If biopsies are pursued, aerobic and anaerobic bile cultures and hepatic copper quantitation are also recommended.
4. If a conservative approach is desired, consider empirical treatment for bacterial cholangiohepatitis (amoxicillin-clavulanic acid, Denamarin). 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.

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- Given the gall bladder changes, Ursodeoxycholic acid (Ursodiol) is recommended. Serial sonographic monitoring (e.g., every 4-6 weeks) of the gall bladder is recommended to assess for progression to a fully formed mucocele. If progression occurs, a cholecystectomy may be warranted.

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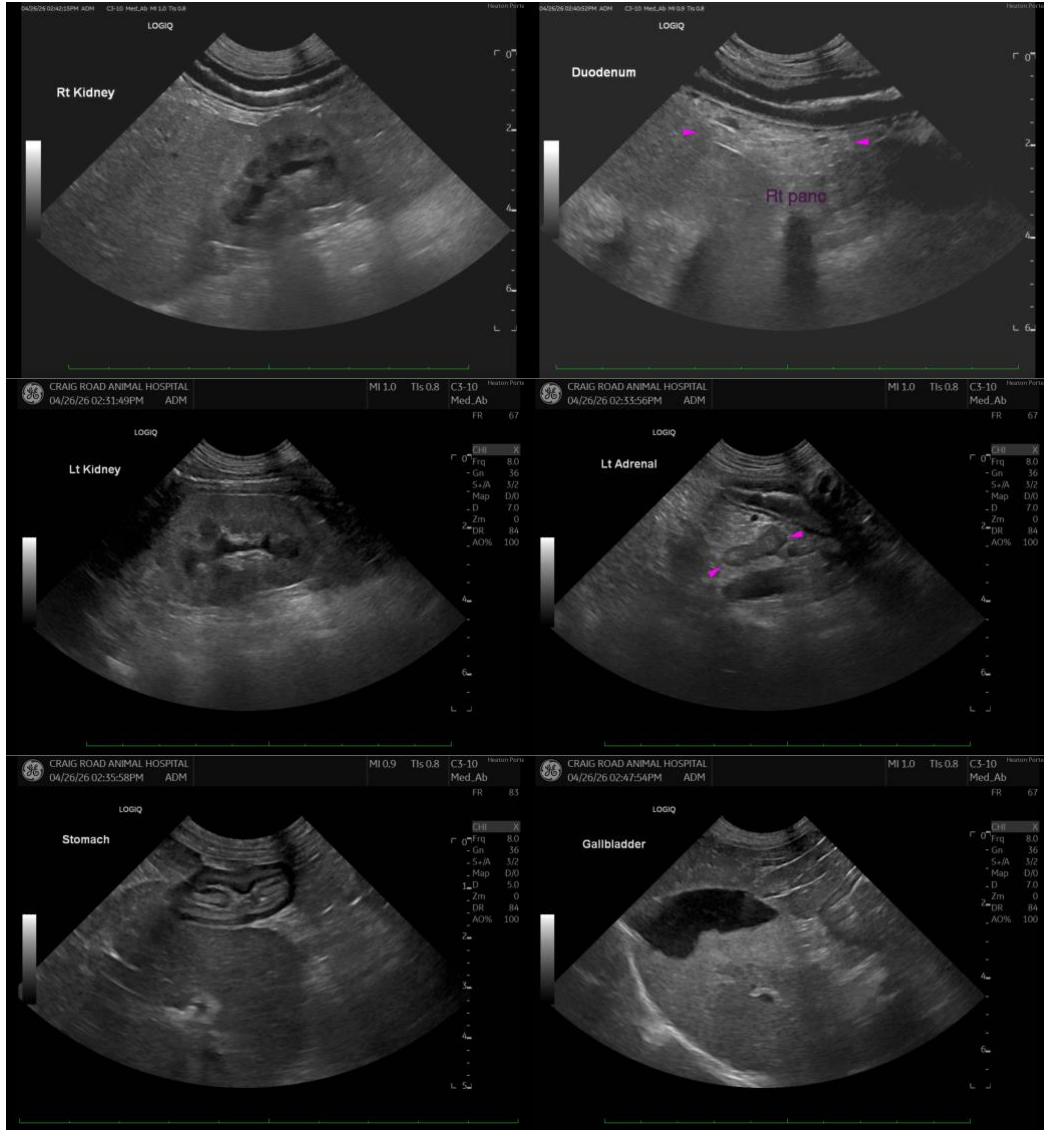
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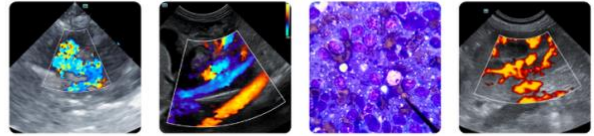
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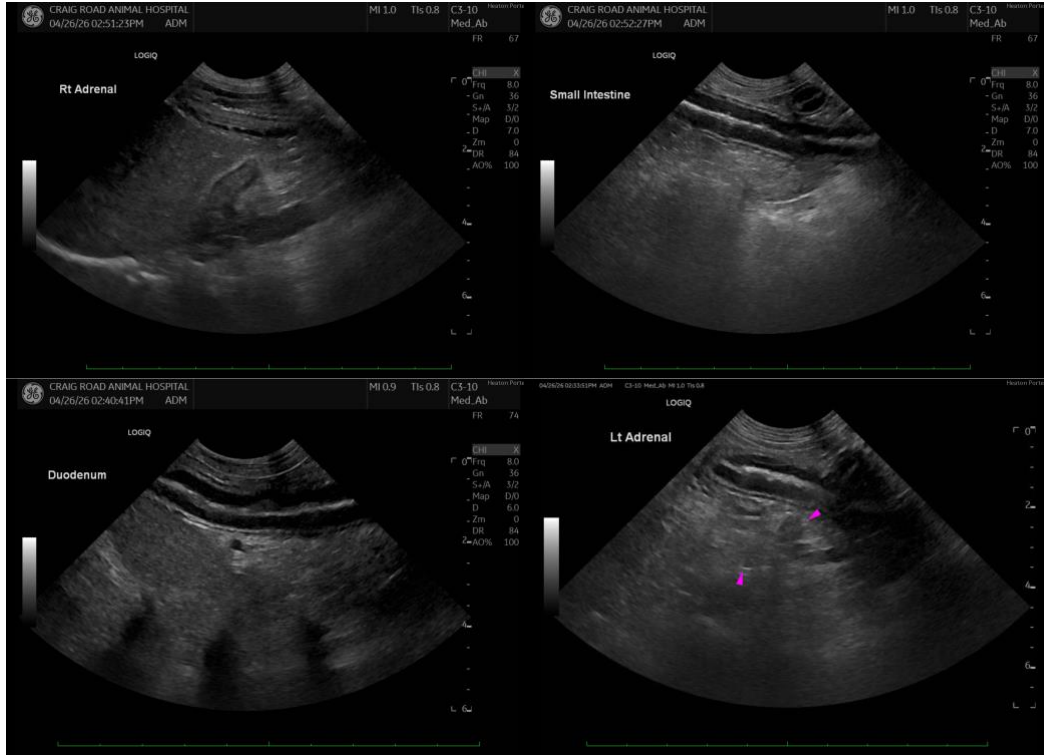
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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