

**DATE PRESENTING CLINICAL SIGNS**

6/28/22 Pet presented to vet on vacation 3/22 for pancreatitis and proteinuria was noted. owner reports pet is not PD or PU. Multiple urine sample for 3 months proteinuria (protein/creatinine ratio 1.1-1.5) and low SG (1.014-1.018) Pet has historically elevated ALKP, normal BP

**PATIENT**

Scooby Fawcett

Current Medications: Galliprant 20mg 1/2 SID, Cerenia 16mg EOD for chronic cough, Tussigon 5mg, 1/2 tab at night if needed, Adequan injections.

**SPECIES**

Canine

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

**BREED**

Yorkie

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****Urinary System**

Urinary bladder is moderately distended. It has a normal uniform wall thickness (<0.2 cm). Contents include primarily anechoic fluid combined with both gravity dependent and suspended echogenic non-shadowing debris within the fluid. There is sand grit/mineral settled along the dependent wall in the trigone. A cystolith in that area cannot be ruled out. There is a small cystoliths also within the urethra at the level of the postate. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

**AGE**

5/21/08

Prostate (neutered) is normal in size, echotexture and echogenicity for a neutered male.

**WEIGHT**

14 Pounds

The right kidney is normal in size (4.7 cm) and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased echogenicity and mild loss of corticomedullary distinction. There is no evidence of pyelectasia or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted, primarily in the diverticular of the kidney.

**INTERPRETED BY**Beth Johnson, DVM  
DACVIM

The left kidney is normal in size (4.31 cm) and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased echogenicity and mild loss of corticomedullary distinction. There is no evidence of pyelectasia or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted, primarily in the diverticular of the kidney.

**IMAGING PERFORMED BY**Stephanie Pearce  
RDCS, RVT**Adrenal Glands**

The left adrenal gland is enlarged in size (2.13 cm long x 0.68 cm at the cranial pole and 0.86 cm at the caudal pole). Normal shape and contour are maintained. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

**HOSPITAL NAME**

Honeygo AH

The right adrenal gland is enlarged in size (2.51 cm long x 1.26 cm at the cranial pole and 0.72 cm at the caudal pole). Normal shape and contour are maintained. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

**REFERRING VET**

Dr. Mullenex

**Spleen**

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). Multifocal well-demarcated hyperechoic homogenous nodules are present. Splenic vasculature appears normal.

**INVOICE**

39081

### **Liver**

The liver is subjectively enlarged with 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.

The gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

### **Gastrointestinal**

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. The acoustic shadow beyond the gas is marked, and a non-obstructive foreign object cannot be ruled out. There is no evidence of obstruction, foreign material or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). 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 (< 0.2 cm) and layering. It is very full. Contents are consistent with formed feces and gas.

### **Pancreas**

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

### **Free Abdomen**

No appreciable free fluid is seen in these images, including no pericardial effusion. There is a 1.3 cm diameter cystic lymph node medial to the right kidney.

## **PRIMARY FINDINGS**

- Bilateral adrenomegaly – consistent with adrenal hyperplasia secondary to pituitary depending hyperadrenocorticism vs normal variant.
- Hyperechoic hepatomegaly – most consistent with benign steroid (endocrine) hepatopathy or reactive or idiopathic hepatopathy. Infiltrative neoplasia such as round cell neoplasia is also possible, but considered less likely.
- Gallbladder debris - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.
- Enlarged cystic lymph node medial to the right kidney – This is a finding that can be seen with chronic urinary tract infections, pyelonephritis, etc.

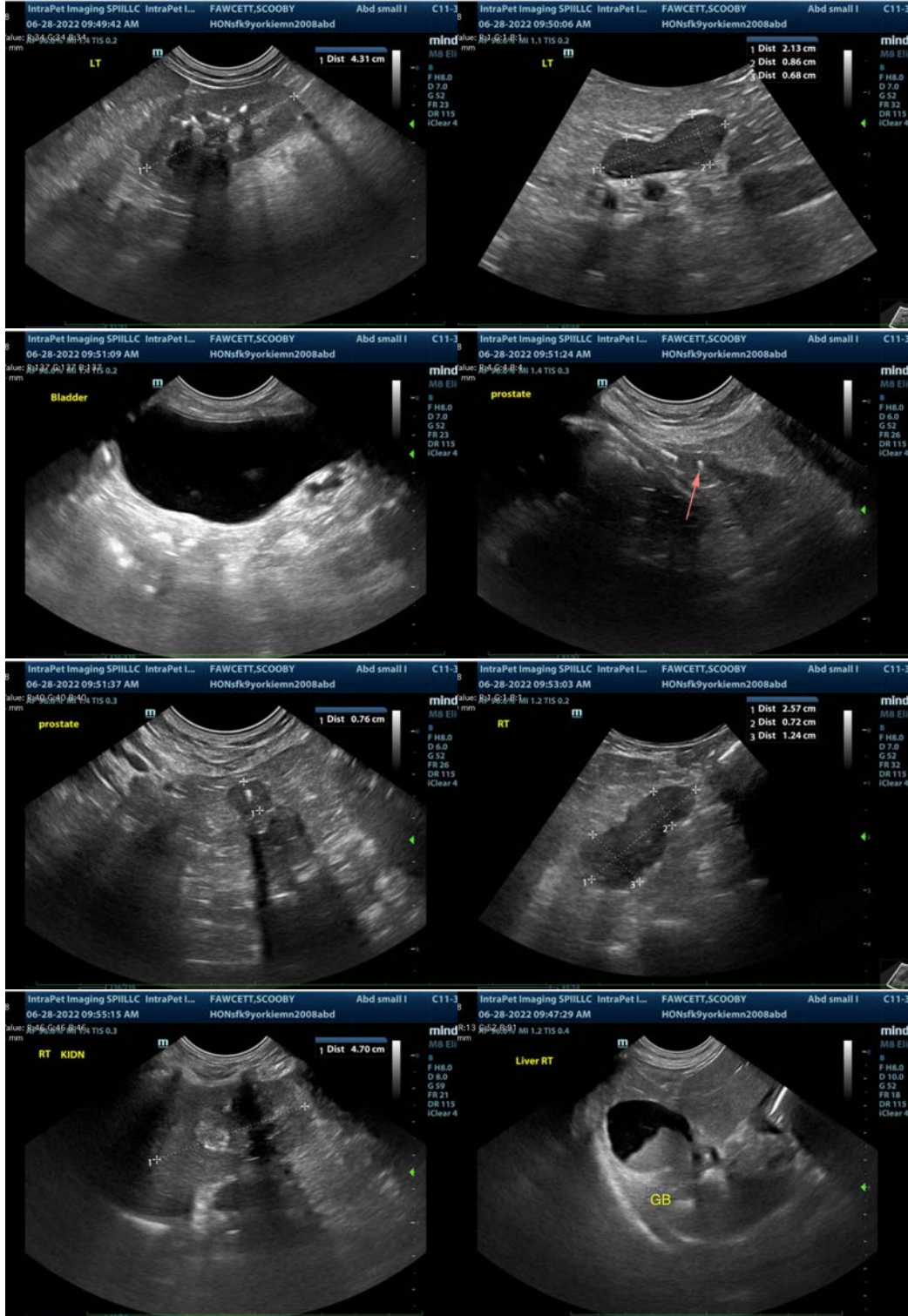
## SECONDARY FINDINGS

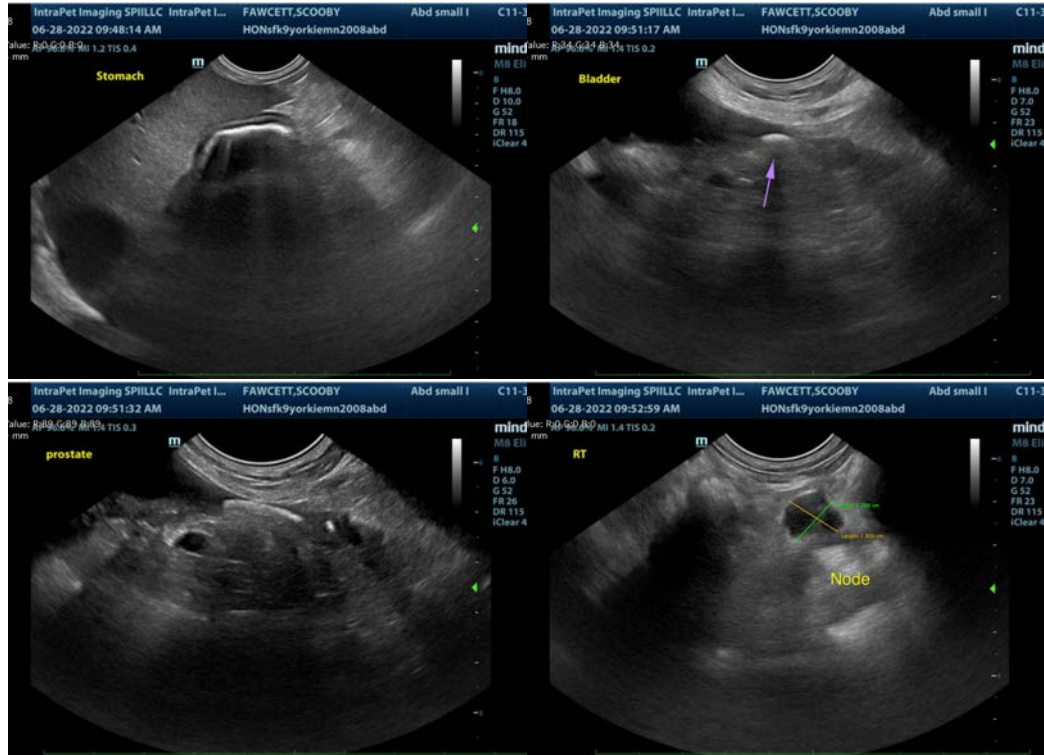
- Urinary bladder debris with cystoliths including a cystoliths within the urethra at the level of the prostate.
- Bilateral age related kidney changes with non-obstructive nephrolithiasis.
- Hyperechoic splenic nodules – most consistent with benign myelolipomas. Other differentials such as fibrosis or calcification caused by old hematomas or infarcts, chronic inflammation, granulomatous disease or metastatic disease cannot be ruled out, but are less likely.
- A non-obstructive gastric foreign body cannot be ruled out. However, gas is considered more likely.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- The described adrenal gland, liver and gallbladder changes are all suggestive of hyperadrenocorticism. If clinical signs of hyperadrenocorticism, such as polyuria, polydipsia, polyphagia, panting, hair loss, hypertension, etc. are present, testing for hyperadrenocorticism with a LDDS test is warranted. If clinical signs are not present, monitoring is recommended with testing pursued when/if clinical signs develop.
- If not recently evaluated, blood pressure is recommended.
- If not recently evaluated, a urinalysis and, if indicated based on urinalysis results, urine culture are also recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.
- Questioning of the owner regarding any potential lower urinary tract signs such as stranguria is also recommended, given the small urethral stone to rule out possible partial obstruction.
- If gastrointestinal signs are present such as vomiting, inappetence, etc., reevaluation of the stomach with either x-rays or ultrasound is recommended for further definitive rule out for possible non-obstructive gastric foreign body.







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.

**Beth Johnson, DVM, DACVIM**  
Beth.Johnson@sonopath.com