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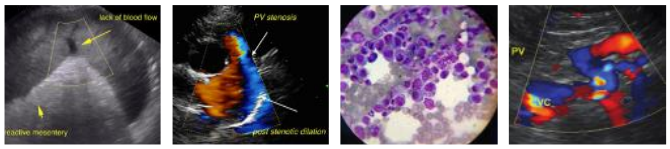
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™




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

**PATIENT**
Frank Fisher

**SPECIES**
Canine

**BREED**
Pug

**SEX**
Neutered Male

**AGE**
10 Years

**WEIGHT**
34.5 Pounds

**INTERPRETED BY**
Beth Johnson, DVM DACVIM

**IMAGING PERFORMED BY**
Meghan Myers, DVM

**HOSPITAL NAME**
Hershire AH

**REFERRING VET**
Susan Zhang, DVM

**INVOICE**
20505

**DATE**
1/9/23

## PRESENTING CLINICAL SIGNS

History: Seen 1/3 for ADR, crying, soft stool, no urinary issues--had cerenia, SQ, metro, buprenex for pain(tense on abd palp) rechecked 1/5 for not much improvement and still crying--added in gaba, cerenia oral tgh, 1 dose of entyce. BW--CBC wnl, Na/K 26, ALP 216 no improvement in crying or inappetence

Abnormal PE/Chem/CBC/UA Results: u/a in house: rare wbc, rare rbc, no bacteria, ph 7

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

Urinary bladder is adequately distended with anechoic contents. No masses or inflammatory changes are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface. A 2.8 cm x 1.8 cm, irregular mineral density with strong acoustic shadowing was noted consistent with a large cystolith.

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

Left kidney is normal is size (5.2 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted.

Right kidney is normal is size (5.5 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted.

### *Adrenal Glands*

Left adrenal gland is normal in size (0.84 cm at caudal pole, cranial pole is not well visualized in these images), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

The area of the right adrenal gland is examined without evident adrenal gland pathology.

### *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). A 1.2 cm round slightly heterogenous, primarily hypoechoic non-capsule-disrupting nodule is noted in the mid body. Splenic vasculature appears normal.

### *Liver*

Liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as very mild 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.

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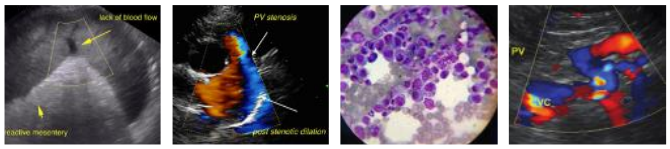


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### *Gastrointestinal*

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering. 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 and layering. Contents are consistent with normal formed feces and gas.

### *Pancreas*

The observed pancreas appears appropriately isoechoic to surrounding omental fat. The capsule is mildly irregular in shape. Parenchyma is mildly heterogenous and coarse. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

### *Free Abdomen*

There is no evidence of peritoneal effusion. There is no apparent lymphadenopathy.

## ULTRASONOGRAPHIC FINDINGS

### Primary Findings

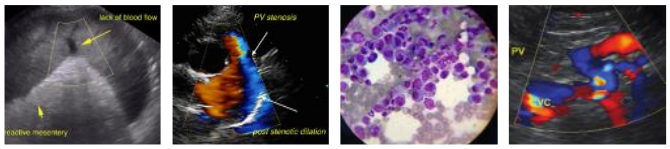
- A large mineral density within the urinary bladder, most consistent with a cystolith
- Small nonobstructive nephroliths bilaterally

### Secondary Findings

- Hypo to anechoic splenic nodule – likely represents a benign lesion such as a cyst, hematoma, nodular hyperplasia, extramedullary hematopoiesis, etc., however while considered less likely, infiltrative neoplasia can mimic benign lesions, and cannot be ruled out.
- 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.
- Pancreatic age-related remodeling – Mild irregularities are consistent with benign age-related change. Low-grade smoldering chronic pancreatitis cannot be ruled out and should be suspected in the face of appropriate clinical signs.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The mineral density/cystolith within the urinary bladder could be the cause of this patients described discomfort, however, it's slightly atypical that there are no supporting urinary tract signs. Additionally, other sources of pain, such as cervical, spinal, orthopedic, etc., should be ruled out.



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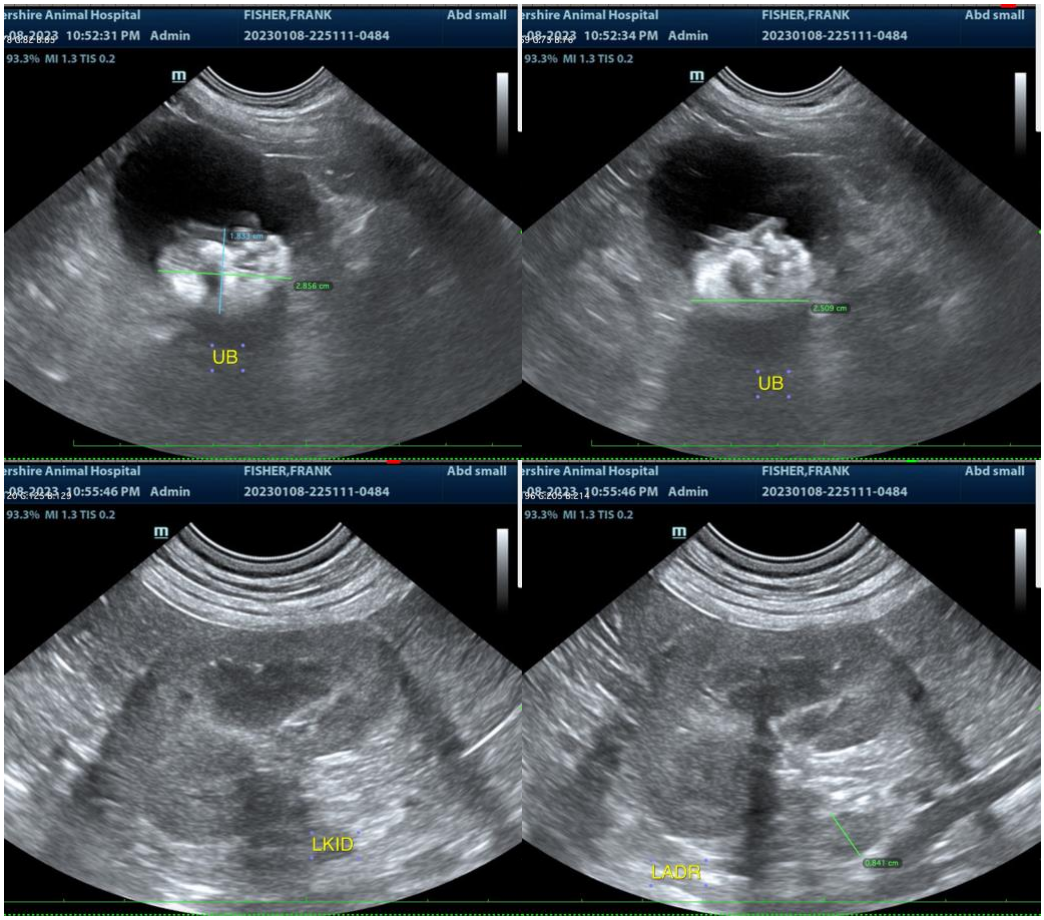
In the meantime, given the reported gastrointestinal signs and electrolyte abnormalities, etc., a baseline cortisol is recommended. If baseline cortisol is less than 2, a full ACTH stimulation test is recommended to rule out hypoadrenocorticism. If clinically indicated, +/- a gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.

Additionally, if not recently evaluated, a urine culture is recommended to rule out an occult urinary tract infection, which may increase suspicion for an infection induced cystolith vs other.

Ultimately, cystotomy may be required for removal of the cystolith, at which time stone analysis is recommended to help further guide future medical management/prevention, etc. If surgery is elected, while the splenic nodule trends in appearance towards benign, a biopsy could be considered to rule out early or emerging infiltrative neoplasia.



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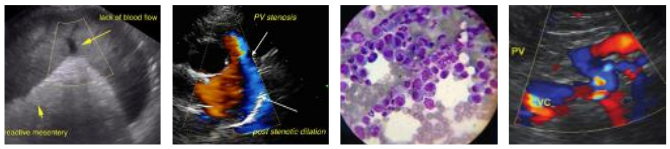

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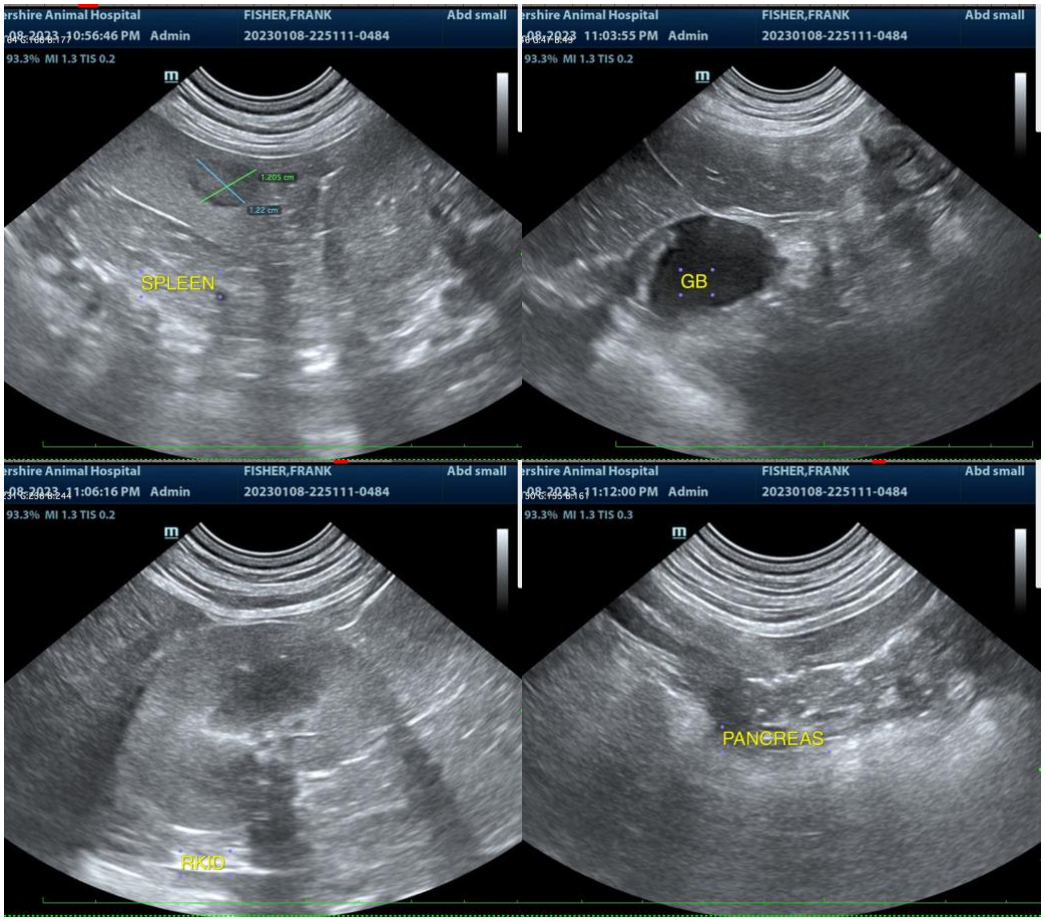


**The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

**Beth Johnson, DVM DACVIM**

Beth.Johnson@SonoPath.com