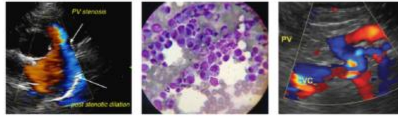




**PATIENT**

Hugo Pearson

**SPECIES**

Canine

**BREED**

Boston Terrier

**SEX**

NM

**AGE**

4 years

**WEIGHT**

23 lbs.

**INTERPRETED BY**

R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

**IMAGING PERFORMED BY**

Sarah Pender, CVT

**HOSPITAL NAME**

SVS Imaging QC

**REFERRING VET**

Dr. Mike White

**INVOICE**

17592

**DATE**

10/5/22

## PRESENTING CLINICAL SIGNS

2nd opinion urinating blood about 1 month, little improvement with antibiotics
Abnormal PE/Chem/CBC/UA Results: Chem 18, t4 cbc all WNL UA protein 3+ Blood trace Bilirubin 1+ WBC 0-2 RBC 0-2 casts fine granular calcium oxalate 3+ radiographs done at previous clinic possible stone

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra (to a depth of 2.0 cm) exhibited normal tone. The urinary bladder exhibited regional mild yet variable prominent walls, exhibiting mild asymmetrical luminal surface. The urinary bladder wall measured 0.28 cm. Hyperechoic focal echogenicities with distal acoustic shadowing were present in the dependent lumen. The calculi were irregular. An example of a calculus measured 1.07 cm in diameter. Suspect potential for two separate calculi, with a primary calculus measuring approximately 1.0 cm in diameter. No evidence of proximal urethral calculi/mineral or obstruction to urine outflow. The calculi appeared to be mobile and moved in dependent location within the urinary bladder based on body position. No evidence of neoplastic criteria.

The residual prostate was symmetrically normal in size with uniform parenchyma and slight coarse echotexture measuring 0.95 cm in diameter.

The area of the aortic trifurcation was free of pathology.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. Minor areas of medullary mineral were present. The left kidney measured 4.5 cm in length. The right kidney measured 4.9 cm in length.

### *Adrenal Glands*

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.3 cm in length x 0.66 cm width at the caudal pole.

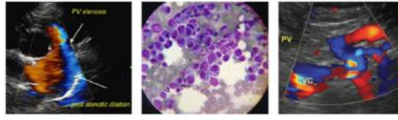
The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 2.8 cm in length x 0.44 cm width at the caudal pole.

### *Spleen*

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

### *Liver/ Gallbladder*

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion.





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The gallbladder was non-distended. Potential for minor subjective gallbladder wall edema was noted in the dorsal gallbladder, measuring 0.13 cm wall width. The gallbladder contained primarily anechoic content with a mild amount of congealed yet nonorganized mildly hyperechoic luminal debris. No evidence of peripheral gallbladder inflammation. The cystic and common bile ducts were normal.

### *Gastrointestinal*

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

Normal visible colon wall layers were present with apparent formed feces in lumen.

### *Pancreas*

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

### *Free Abdomen*

No overt lymphadenopathy or peritoneal effusion was present.

## ULTRASONOGRAPHIC FINDINGS

### *Primary Findings*

- Cystic calculi with mild secondary cystitis
- Minor bilateral renal medullary mineral

### *Secondary Findings*

- Mild gallbladder debris, potential mild dorsal cholecystitis pattern (non-mucocele)

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the hematuria in this patient is most likely secondary to the cystic calculi and secondary cystitis. The calculi did not overtly appear to be adhered to the inner luminal wall, as they appeared to move within the urinary bladder lumen with patient rotation. Urine culture and sensitivity on sterile urine sample is recommended to definitively rule out infection, if not recently done. Cystotomy with urethral and potential urinary bladder flush, stone analysis +/- urinary bladder mural biopsy for histopathology +/- culture and sensitivity, if clinical concern for bacterial cystitis. However, the minor inflammatory changes noted in the urinary bladder wall are suspected to be secondary to the urinary bladder calculus if no evidence of underlying infection.

Assessment of hepatic enzyme levels, for evidence of inflammation or cholestasis is recommended.

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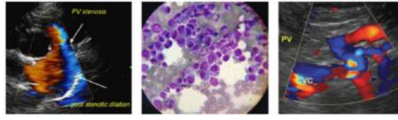

SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™

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

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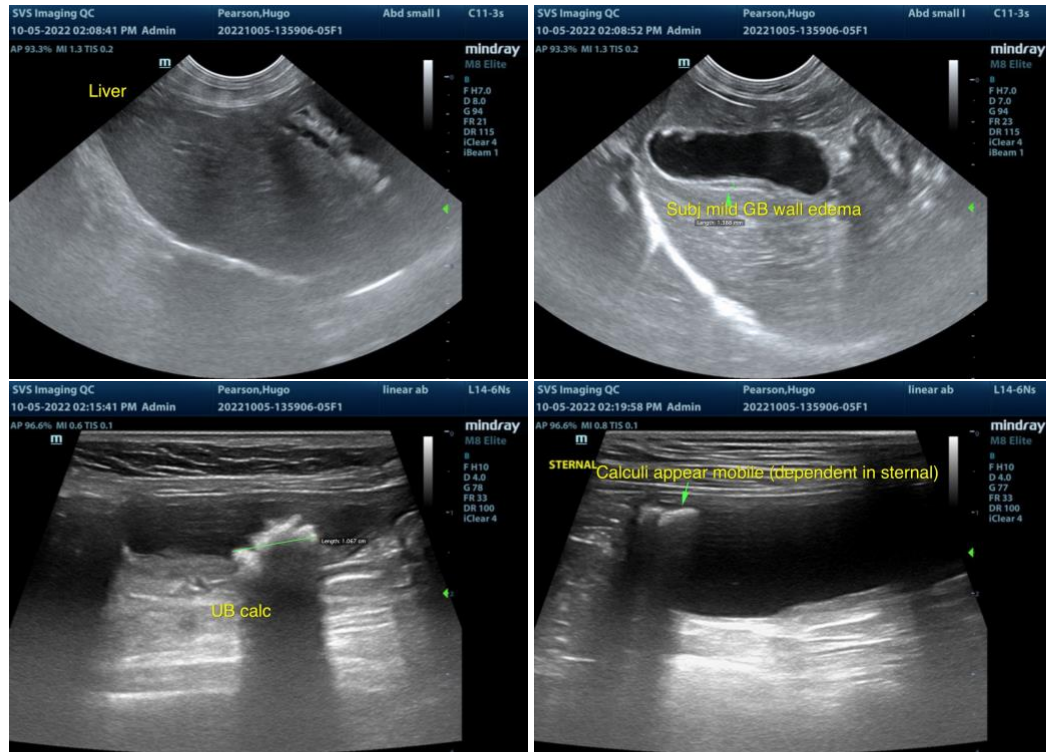


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

**R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)**
**info@SonoPath.com**